



### **SEAKNOT**

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## **Communication, Dissemination and Exploitation Plan**

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### Summary

A detailed communication, dissemination and exploitation strategy plan developed very early in the project (month 6) updated throughout the project based on the evaluation of its impacts. This document will include a detailed planning of all communication actions and their timing, the key messages and defined target audiences, an event and publications management plan and the key performance indicators, describing also the main communication tools and actions.

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### Approval

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## Abbreviations

AB	Advisory Board
AM	Accident Management
ATF	Accident Tolerant Fuel
CA	Consortium Agreement
CD&E	Communication Dissemination & Exploitation
C&D	Communication & Dissemination
CRP	Coordinated Research Project
CSNI	Committee on the Safety of Nuclear Installations
DoA	Description of Action
EC	European Commission
ECCP	Electronic Collaborative Content Platform
ERMSAR	European Review Meeting on Severe Accident Research
E&T	Education and Training
EU	European Union
EUG	End User Group
ExB	Executive Board
FP	Framework Program
GA	Grant Agreement
GEN	Generation
GNSSN	Global Nuclear Safety and Security Network
IAEA	International Atomic Energy Agency
K2T	Knowledge and Knowhow Transfer
KNOS	Knowledge Spreading
KOM	Kick Off Meeting
KTP	Knowledge Transfer Platform
LWR	Light Water Reactor
MSc	Master of Science
MUSA	Management and Uncertainties of Severe Accidents
NEA	Nuclear Energy Agency
NPP	Nuclear Power Plant
NUGENIA	Nuclear Generation II & III Alliance
OA	Open Access
OECD	Organization for Economic Cooperation and Development



PhD	Philosophy Doctor
PIRT	Phenomena Identification Ranking Table
PIRTSA	Phenomena Identification Ranking Table on Severe Accident
PMO	Project Management Office
PROC	PROject Coordination
PSA	Probabilistic Safety Analysis
R&D	Research and Development
SA	Severe Accident
SADD	Severe Accident Database Directory
SAINET	Severe experimental Accident Infrastructure NETwork
SAM	Severe Accident Management
SAP	Severe Accident Phenomenology
SARNET	Severe Accident Research NETwork
SDG	Sustainable Development Goal
SEAKNOT	SEvere Accident research and KNOWledge managemenT for LWRs
SMLWR	Small Modular LWR
SNETP	Sustainable Nuclear Energy Technology Platform
SMR	Small Modular Reactor
ST	Source Term
TA	Technical Area
TSO	Technical Support Organization
UaSA	Uncertainties and Sensitivity Analysis
VADD	Validation Database Directory
WGAMA	Working Group on the Analysis and Management of Accidents
WP	Work package
WPL	Work package leader

## Summary

This D4.4 “*Communication, Dissemination and Exploitation strategy Plan*” has been developed in sub-WP4.4 Task 1 “*SEAKNOT Public Communication*” by UNIPi, with the support of the SEAKNOT Coordinator and LGI, at the beginning of the project. This strategy plan will be updated throughout the project duration, based on the evaluation of its impacts.

Given the nature of the SEAKNOT project as an historical archive on SAs projected towards future needs, a powerful communication and dissemination strategy of its major outcomes is at its backbone. Therefore, the first action for the Task 1 of sub-WP4.4 has been to determine the needs of the project and to identify its communication and dissemination goals to be reached and how to achieve them. EUG will play a role in identifying the most efficient actions and channels to reach the target audiences. To maximize the impact of the SEAKNOT outcomes, this strategic plan includes:

- A detailed planning of all communication, dissemination and exploitation actions, their goals and timing, including the K2T actions to strengthen the background and skills of young generations in the SA field.
- A description of the main action lines.
- Key messages and defined target audiences.
- Identification of key performance indicators for the goals to be reached, as the number of international journal papers, the number of public website views or the engagement on social media.





# 1 Introduction

The specific objectives of the SEAKNOT project are:

- **To carry out a sound and critical analysis of the current knowledge on SAs.** Based on it, recommendations will be given on the way forward to significantly reduce risks associated with existing (Gen II and Gen III) and forthcoming nuclear technologies (SMLWRs & ATFs).
- **To identify the future experimental research needs** required to support and further optimise SA mitigation measures.
- **To strengthen the background and skills of young generations in the SA field**, by a range of dissemination and communication activities in which a mobility programme will be the backbone of an efficient Knowledge and Know-how Transfer (K2T) from senior scientists and engineers.

As a result of meeting these objectives, SEAKNOT will contribute to an effective promotion of the nuclear safety culture, with the inclusion of the emerging research needs in SA area of EU Member States and a firm support of the K2T for those who might be involved in the safety of the running nuclear fleet in the coming decade and beyond. The global SEAKNOT methodology to reach these objectives relies on two fundamental pillars: *expertise* and *state-of-the-art*.

**Expertise.** SEAKNOT's aims to produce the means to make the SA related research as efficient as possible, in the coming decade, by identifying what should be addressed, by enabling the capabilities of those who plan to be involved in it, and by stating which existing or non-existing experimental infrastructures would be needed for such a purpose. What really matters is bringing together senior experts with diverse perspectives (i.e., researchers, regulators, industry ...) and mind-sets into the project, so that the planned critical assessments are not biased. At the same time, it is of utmost relevance to bring young researchers (who are either in the process of obtaining or just having completed their doctoral degree) into the project and make them training and working with different EU teams currently conducting relevant pieces of research in the SA domain.

**State of the Art.** The backbone of the project is the Phenomena Identification and Ranking Table on severe accidents (PIRTSA) that will be produced in SEAKNOT WP1 together with the consolidated information on experimental database deriving from WP2 VADD as well as critical SA experimental infrastructure (SAINET), as the most important project outcomes. The SADD tool will be available upon request by European organizations outside SEAKNOT right after the project end, as it will be a major outcome to be exploited. The resulting new State of the Art will be disseminated at different levels, from lectures in future SAP course editions and in the SA textbook [1] update (published by SARNET in EU FP6) to potential papers in future editions of the ERMSAR conference and scientific journals.

The relevance of SEAKNOT is strongly related with the present conditions in the SA research: the huge knowledge and know-how acquired for decades are at risk of being lost as many specialists have already retired or are about to; many old archives and experimental data might be lost forever, if not proper measures are initiated; human and technological resources to do experimental and modelling research are being reduced because of funding cuts. At the same time, new approaches for the SA assessment are being explored (UaSA), as in the Horizon 2020 MUSA project [2], and the thorough comprehension of results demands involvement of senior experts more than ever.

In the context of raising a wide public participation and awareness on the SEAKNOT network, a realistic and consistent Communication, Dissemination and Exploitation Plan is defined for its implementation during the lifetime of the project (4 years). This plan has been established in the first 6 months of the project by UNIPi with the support of the Coordinator and LGI, and it will be periodically updated when necessary. It will be submitted to the SEAKNOT EUG very early in the project for comments and integration, particularly on its goals.



## 2 Objectives and Main Lines of the Plan

The outcomes from SEAKNOT are intended to reach the entire SA community and, if possible, other stakeholders; this is perfectly aligned with the EU open access science initiatives. By communicating and disseminating its outcomes, the influence of SEAKNOT will be fostered and, in case that a matter of discussion might come up with experts and organizations outside the project, there will be instruments in place to set an open dialogue that ends up strengthening the SEAKNOT impact.

Therefore, one of the goals of the SEAKNOT project is to efficiently articulate its C&D activities so that these technical outcomes reach as many stakeholders as possible, and the resulting enhancement of nuclear safety reaches the general public. For this reason, the project results are expected to be profusely disseminated and exploited since their outcomes are relevant for very large communities: SA researchers, PSA level 2 analysts, proposers of SAM measures, regulators, environmental impact modellers and "emergency and preparedness" people, but also, from an educational point of view, to strengthen the background and skills of young generations. A particular attention will be also paid to report these outcomes to other Bodies closely involved in nuclear safety, like OECD/CSNI (WGAMA) and IAEA (Coordinated Research Projects CRPs ongoing), which also have a sound engagement with nuclear K2T activities.

As previously mentioned, a special attention in the dissemination of the SEAKNOT outcomes and in E&T actions is indeed given to facilitate the K2T transfer towards the young researchers in the SAs field and the European MSc/PhD students, for a substantial contribution to strengthening the young workforce through an ambitious plan of dissemination oriented to an effective promotion of the safety culture.

### 2.1 Objectives

In order to maximize the impact of SEAKNOT outcomes, a quite active C&D policy will be fostered along with a commitment to publish summary papers of its progress in open access journals and international conferences and/or technical meetings in different frameworks (OECD, SNETP, IAEA...) so that the impact of the project will be not restricted to SEAKNOT partners and partners' countries. It should be emphasized that any dissemination action will have aims in three elemental axes:

**Scientific**, supporting the creation and diffusion of high-quality applied knowledge, including training and mobility of young researchers, in SA area and attract talent at all levels for the activities related to the safety of nuclear plants.

**Societal**, generating knowledge that support the uptake of innovative solutions in industry and society to address global challenges including the SDG7 – Affordable and Clean Energy.

**Economic**, facilitating the technological development, demonstration and knowledge transfer, and strengthen the deployment of innovative solutions.

The general objectives of the planned C&D actions are:

- Drawing the attention of national governments, regional authorities, TSOs and other public and private funding sources to the needs of research on SA.
- Attracting the interest of potential new partners for the project itself.
- Encouraging talented European students and young scientists to join the partner organisations and/or to improve their nuclear culture and their knowledge in the field of SA research.
- Enhancing the reputation of the consortium participants in the field of the safety of NPPs at local, national and international level.
- Helping the search for future financial backers (as future end-users of the SEAKNOT research).
- Giving the right information to the stakeholders and to the generic public on the safety of NPPs.
- Transferring and sharing an open knowledge in relation with the project expected outcomes.



## 2.2 Main action lines

The SEAKNOT sub-WP4.4 *Communication & Dissemination activities* covers the communication, dissemination and exploitation activities of the whole project for the entire four years duration, with particular emphasis on the transfer of the technical outcomes of SEAKNOT beyond the project's partners towards the international scientific community mainly by the organization of the ERMSAR Conferences in sub-WP4.2 but also towards as many stakeholders as possible and to the generic public to raise awareness of nuclear energy.

UNIPI will manage this sub-WP4.4, together with CIEMAT and LGI (for the Task 1), and all SEAKNOT partners will be involved to some extent in the C&D activities, in particular IRSN, KIT, CEA, JSI and ENEA. Inside sub-WP4.4 four main tasks can be distinguished.

**Task 1. SEAKNOT Public communication:** for this task, together with the present deliverable D4.4, a series of communication tools and actions will be implemented very early in the project, as the project brand (i.e., the logo reported in Figure 1 and the visual identity), document templates (doc and ppt), roll-up and flyer, including:

- the project public website providing general information about SEAKNOT. Partners will provide updates for the website regularly throughout the project with news about their results.
- a yearly electronic newsletter will be issued by the project coordinator, with the LGI support, at the end of each year of the project to inform stakeholders of the project's progress. It will include a word from the coordinator, a highlight per work package, relevant news and announcements, workshops and conferences.
- a simple general presentation of the project to be used by partners for their communication actions.
- a LinkedIn account to communicate on SEAKNOT, promote its results, and advertise the professional community about the different activities (UNIPI will manage this LinkedIn account) <https://www.linkedin.com/company/seaknot-eu/>.



Figure 1: SEAKNOT logo

**Task 2. SEAKNOT Internal Dissemination:** internal workshops will be periodically organized to enhance partners' exchanges and discussions beyond the technical meetings. These workshops will enhance the internal communication and encourage the common actions, in particular the preparation of joint technical papers. Given the necessary collaboration of partners in most of actions within the technical WPs (WP1, 2 and 3), these exchanges will inexorably happen along the project.

**Task 3. SEAKNOT External Dissemination:** The dissemination actions to the project's stakeholders are the key activities in this task, to widely promote the results generated in SEAKNOT toward their exploitation. The main dissemination channel of the project results for the scientific community will be the two ERMSAR Conference editions, organized in sub-WP4.2, but also other relevant scientific and technical events will be identified and the consortium's participation in submitting papers, presenting, promoting, and disseminating the project's results at international conferences, forums etc. will be coordinated. Besides, the technical reports to be produced within SEAKNOT will become a major reference for lectures integrating the technical programme of the future SAP courses.



General presentations and posters about the project and its progresses and results will be prepared for partners in the Task 1 of sub-WP4.4.

Open Access scientific publications in peer-reviewed journals and online repositories, such as Zenodo, will also be coordinated.

**Task 4. Internal Mobility of Young Researchers:** The internal mobility program aims at training young researchers and MSc/PhD students from the consortium organizations through delegations towards the SEAKNOT partners' laboratories to enhance the exchanges and the dissemination of knowledge, including the K2T. Additionally, the presence of these young students or researchers in international conferences, workshops, and seminars to present some SEAKNOT results, will be also supported. Supporting the participation to the two short SAP Courses, organized in the sub-WP4.1, or other international courses on areas related to SA will be also considered.

The C&D strategy plan, to be realized in these four WP4.4 Tasks, involves six main action lines, which are either part of the project work programme already defined in the Annex I Part B of the GA (so-called "*Description of Work*") [3], or new actions. These six action lines are listed in the following Table 1 and detailed in the following Section 3 of the plan.

**Table 1: Main action lines**

Action	Comment
<b>Public communication</b>	Actions to be initiated mainly by the Coordinator and LGI, with the support of the WP4 participants and the ExB
<b>Web site</b>	Main channel for external communication, aiming to reach all audiences, including the general public, this task will be supported by the Coordinator and LGI
<b>Internal dissemination</b>	Actions to be initiated by the ExB and the Coordinator for presentations on progress of work
<b>External dissemination</b>	Actions already presented in the GA; it is monitored by the coordinator with the support of the ExB and the WP4 members
<b>Partners' activity reports</b>	Actions based on contributions from all the partners in the frame of their own communication plans
<b>Education and training</b>	Actions focused on MSc and PhD students, but they will be open also to young researchers in the SA field

### 3 Description of the Main Action Lines

The six main action lines for communication, dissemination, and exploitation of the project outcomes in SEAKNOT are described in detail in the following paragraphs.

#### 3.1 Public Communication

All the outcomes from SEAKNOT will be communicated as widely as possible within both the European Community and beyond. A series of communication tools and actions will be implemented with the support of LGI:

- A project brand (logo and visual identity) will be designed very early in the project (Figure 1), including standard presentation slides, posters, and the different document templates to ensure the SEAKNOT project's visibility among all relevant stakeholders.
- Communication support materials, as a roll-up, general SEAKNOT posters/presentations and a leaflet/factsheet presenting the project will be produced in Task 1 of sub-WP4.4 and updated to communicate on the project at conferences, workshops and online.



- A public website will be designed and updated regularly, to serve as the main communication channel towards the project’s stakeholders and the target audiences. To promote this website, it will be always highlighted in presentations and publications in which key information of the SEAKNOT project will be included, during public events like SNETP Forum, National Nuclear Conferences, National Nuclear Technological Platforms, National Nuclear Societies or in scientific and technical publications.
- A social network account (LinkedIn) and group will be created very early in the project and managed (in collaboration with all the partners) in order to communicate on SEAKNOT, promote its results, and advertise on the SAP Courses and ERMSAR Conferences, as well as the mobility opportunities, permitting also a two-way dialogue with the target groups.

Written information on relevant events will be also communicated to the international and national media, also for a generic public audience. These events and press releases will be also notified in the public websites of the SEAKNOT partners. For these major events, the edition of an article oriented to a generic public will be requested directly through contacts with journalists or indirectly through press invitation to the events, also involving the press officers of the partners. Other generic publications could be envisaged, such as papers in EC periodic reports or scientific dissemination journals.

The possibility to release information through the communication means of the SNETP/NUGENIA platforms and newsletters will be also pursued. Additionally, the fact of having staff members of IAEA and OECD/NEA will allow using their channels to communicate any outcome from the project.

Public communication activities will be closely linked to the dissemination and exploitation objectives. These activities will include various means and channels at different levels and will be aimed at diverse audiences. The target audience for CD&E are identified in the following Table 2, together with the targeted key messages. The targeted messages for each group will be used to boost their engagement with the SEAKNOT project.

**Table 2: Target groups for CD&E and targeted key messages**

Target audience	Why this audience?	Key message(s)
<b>Nuclear engineers &amp; scientists</b>	They are the present “repository” of the existing knowledge and know-how on SAs	Need to cluster capabilities towards those issues highlighted in SEAKNOT as worth investigating for a safe operation of the nuclear fleet
<b>Academia &amp; research centres</b>	In addition to gather a good part of knowledge and know-how, they will be main actors in E&T	Support in the E&T and K2T for those who will be involved in design/running the future nuclear fleet, as the SA textbook and SAP courses
<b>International organisations (IAEA, OECD/NEA, WANO)</b>	Promote a strong and sustainable global nuclear safety and security framework, which will benefit from the project outcomes	SEAKNOT outcomes as PIRT and updated SA textbook will be a support in their E&T actions
<b>Students</b>	Main target of the project outcomes on E&T	Highlight the attractiveness of SA research and increase of skills in the field
<b>European national policymakers</b>	Critical decisions to be taken to prevent further progression towards climate change	Nuclear safety is continually optimized under any circumstance, particularly SAs. SEAKNOT outcomes will be a support to decisions on the environmental protection policy using nuclear energy as a “green source”



<b>Nuclear regulators &amp; safety authorities</b>	<p>Their insights concerning safety significant matters will be helpful for SEAKNOT</p> <p>A critical review of what is already considered a settled knowledge and an update of major safety significant gaps would be appreciated, particularly concerning prevention and mitigation of SAs</p>	Exploitation in the safety related decisions of SEAKNOT results as PIRT and SADD
<b>Nuclear power plant owners</b>	<p>Direct communication for an immediate enhancement of safety in their facilities</p> <p>Raise their interest in investing on prevention and mitigation of SAs</p>	Exploitation of results for a “practical elimination” of consequences associated with extended core melt or spent fuel damage for all reactors currently in operation in EU and for reactors to be licensed for design-life extensions
<b>User-side industries</b>	Need to maintain the know-how	Design of the future NPPs and as they will be improved by the exploitation of the SEAKNOT results as PIRT, SADD and K2T
<b>General public</b>	To contribute to fade the risk perception and give elements for a true assessment of nuclear safety	Risk from running NPPs is residual compared to many others society lives with Increase in the acceptability of nuclear energy
<b>Civil society</b>	<p>An asset for an educated mode of looking at nuclear power, as a safe and ecological energy source</p> <p>Promoters of safety culture</p>	Nuclear energy as a safe and ecological resource to be in the energy portfolio in future

The following Table 3 summarizes the communication tools and actions that are planned to be implemented during the project, with identified audience, timing and indicators of success.

**Table 3: Communication tools, targets, and indicators**

Channel	Purpose	Target audience	KPIs
<b>Project open website</b>	The main communication tool for promoting SEAKNOT, this website will share general project information, public deliverables, open documents and publications, and announce events	All target groups	> 5,000 sessions (around 2,000 users) by the end of the project
<b>Project Roll-up and flyer</b>	To be displayed at events to key audiences, both in-person and online, informing about SEAKNOT	Nuclear engineers & scientist	Display the SEAKNOT general poster at 5 nuclear events at least
<b>Social media: LinkedIn</b>	To build an online community among professionals in the field of SAs, and to raise awareness among followers	Scientific and general professional public	At least 200 followers by the end of the project



<b>Newsletters</b>	A yearly electronic newsletter will be issued to the SA community to report on latest activities and news	Nuclear engineering & research community	At least 100 subscribers by the end of the project
<b>Scientific publications</b>	To disseminate the project results among leading scientific journals and conferences (open access publications)	Scientific community, researchers active in nuclear safety field	From 10 to 20 journal papers and 25 national and international conference communications by the end of the project
<b>SA Textbook</b>	To provide the latest thought and results on SA, to be also a reference book for newcomers	MSc/PhD students and young researchers in the SA field	SA Textbook publication
<b>SAP Courses</b>	Two SAP courses will be organized (during the first 3 years and half of the project) to transfer the knowledge gained on SA to young generation of student and researchers	Persons to be trained in the SA field	50 participants at each edition of the SAP Course
<b>Organisation of the ERMSAR conference</b>	Two ERMSAR conference editions will be organized (during the project) to disseminate the knowledge gained on SA	Scientific community, researchers active in SA area	100 participants at each ERMSAR conference edition
<b>Participation to Events &amp; conferences</b>	To disseminate the project's objectives and results	Scientific community, researchers active in nuclear energy, policymakers and other stakeholders	10 events and conferences where partners have participated by the end of the project
<b>SNETP website</b>	To communicate the project's objectives and results	Scientific community, researchers active in nuclear energy area, policymakers	8 communications related to SEAKNOT activities
<b>SNETP Newsletter</b>	To communicate the project's objectives and results	Scientific community, researchers active in nuclear energy area, policymakers	4 yearly communications related to SEAKNOT activities

A high intensity for communication is expected during the first year in which the project brand identity and the project website will be developed, and the first key messages to the target audiences (SNETP, NUGENIA TA2 communities, NEA/WGAMA, etc.) will be sent out. Beyond this first year, communication activities will mature and the “SEAKNOT presence” in conferences, events and in scientific journals is expected to be incrementally profuse.

The project will engage in a targeted distribution of information and results to spread knowledge and foster discussions, replication and further research and exploitation for the SA topic and the obtained results. This will be accomplished through scholarly as well as non-scholarly publications, participation in events, and cooperation with other relevant projects and initiatives, among other activities.



## 3.2 SEAKNOT Web site

For communication out of the Consortium, an up-to-date public website will be created, dedicated also to the general public. A public website for a research project has a fundamental importance in raising the public interest and possibly increasing its participation.

The SEAKNOT website will be the main channel for the external communications, aiming to reach all audiences, but also for the internal communication (through an *ad hoc* online workspace). The creation of this public website is the first milestone (MS1) of the project itself.

### 3.2.1 Content

#### Public website

This public website should inform about the progress of the SEAKNOT project and its impact, describing - in a comprehensive way even to non-specialists of nuclear safety - the project objectives and, above all, the project findings and results to the "nuclear-concerned" people. Thus, the main results and conclusions of the project should be clearly indicated, and their importance underlined. In addition, the structure of the project should be made clear, as well as the partner organizations and the scientific, technological and organizational environment in which it takes place.

In order to achieve these aims, the public website should have a clear, attractive and aesthetically nice design and a simple and intuitive navigation. It should also contain:

- A short description of the project and its activities. Links will be given to the web pages of each partner organization and the site will also have to give insight into their competences used in the project. Other links will refer to relevant multilateral organizations (OECD/CSNI, IAEA...), European platforms (SNETP, NUGENIA TA2...) and previous EU FP 7 and Horizon 2020 projects on SA research area, as the MUSA one.
- Information about the progress achieved during the SEAKNOT project, with for instance the most important documents that can be open to the public, e.g., list of public upcoming events, synthesis or state of the art reports.... These documents should be easily retrievable by storing them in a comprehensive structure and by a full text search. This section will also include the announcements and information about the SAP courses and ERMSAR conferences, together with other events relevant in the SA area.
- The external newsletters issued during the project.
- A dedicated website section for the SA Database Directory (SADD) tool developed in WP2 will be included and easily accessible.
- The full open proceedings of the two editions of the ERMSAR conference that will be organized in sub-WP4.2 as main dissemination channel for the project results.

This public website will always be referred to in presentations and publications in which key information of the SEAKNOT project progress will be included, such as conference contributions or scientific and technical publications.

As stated in art. 17.2 *Visibility — European flag and funding statement* of the GA [4], the public website will acknowledge the EU support and display the European flag (emblem) and funding statement.

#### Online workspace

The communication among partners (inside the SEAKNOT Consortium) will be made easier via an Extranet collaborative platform as ECCP, to share management and technical documents using the FLEXX applicative developed by LGI. A more detailed description of the online workspace can be found in deliverable D5.1 "*Online Workspace*".



### 3.2.2 Development plan

The address of the public website will be <http://seaknot-project.eu/>. The underlying software for development of the site will be an open-source product, in order to allow easier generation of new content and improvements of the design. As previously said, two kinds of areas will be open: an area accessible to the public and an area with a restricted access for SEAKNOT partners, AB and EUG members (accessible with a login and a password).

Concerning the public area (updated by the project coordinator and by PMO):

1. In the first step the basic information for the SEAKNOT project, such as a general project description, the logo, the partner organizations, a list of contacts, open posters/leaflets and the main objectives will be available for display together with a simple project presentation for the communication actions. Links with the web sites of partners' organizations will be updated or implemented. The SEAKNOT external newsletters, which contain much actual information on the progress of the project, will be displayed on the website in a suitable format.
2. In a second step, the development will focus on the documents that describe the progress and results of the network. In general, most documents that are created by the partners will not be public due to the proprietary data (often experimental data) that may be present in these documents, or due to confidentiality issues. However, efforts will be done to implement as much as possible technical general syntheses. Perhaps not all papers or articles in conferences or journals can be uploaded in this site in general because of copyright restrictions, but their bibliographic information and abstracts will be implemented (however the number of these "closed" publications must be strongly reduced, heavily pressing the use of open literature by ExB).

In this documental section the proceedings of the two ERMSAR conferences will be available as full open documents to further push the dissemination of the SEAKNOT results.

3. Creation of the dedicated website section for the SADD tool, closing the assessment, preservation & dissemination activities for the WP2. This dedicated website can be shared outside the project in a more general way also using external KTPs, i.e., in the SNETP, IAEA and/or OECD/NEA frameworks, with the target of its exploitation and future expansions to accommodate new experimental data sources concerning present and future R&D activities in SA area, after SEAKNOT end. At least, the transfer of this tool to the TA2 of SNETP/NUGENIA is guaranteed at the end of the project.
4. Continuous updating of the information and contents and possible extension of the open website according to the project unfolding.

Concerning the restricted area (updated by all the SEAKNOT participants):

1. In the first step, links (EC participant portal...), management documents (document templates, lists of AB/EUG members, agendas, list of participants and photos of meetings, financial data, periodic reports, project reviews, upcoming events/ actions...) and key technical documents (SEAKNOT proposal, KOM minutes and presentations, deliverables, open publications...) will be available.
2. In a second progressive step, the goal will be to feed the different sections with up-to-date documents and to activate the "sharing space", so that this ECCP site becomes a key tool for fast information exchanges among the SEAKNOT members, as the literature documents for the PIRT activities in WP1.
3. Periodic review of the site contents with the removal of outdated documents and uploading of updates.

### 3.3 Internal dissemination

Internal C&D among the project's partners will be facilitated mainly thanks to the online workspace described in the previous section 3.2.1.

Internal workshops on C&D will be also organized by UNIPI in collaboration with LGI to enhance partners' exchanges and discussions, summarizing the project status and achievements by the



different WPLs. These C&D workshops will also enhance the internal communication and encourage/coordinate the common actions, in particular the preparation of joint technical papers for conferences and journals.

### 3.4 External Dissemination

A significant success factor for the project lies in the capability to reach as many nuclear stakeholders as possible. This part of the C&D plan, mainly addresses the external audiences, highlighting the optimal use of means such as the presentations at conferences and workshops, peer reviewed publications, etc.

To achieve the widest possible reach in terms of external dissemination and foster the exploitation of the project results, a relevant cooperation with international bodies like OECD/NEA, IAEA and SNETP/NUGENIA is planned, as with existing initiatives and related projects, to use their communication channels and build on their established visibility. In particular, exchanges will be sought with NUGENIA/TA2, CSNI/WGAMA, NERIS European platform on preparedness for nuclear and radiological emergency response and recovery, and IAEA Global Nuclear Safety and Security Network (GNSSN).

These strong links with other international organizations that might address in specific ventures the same SEAKNOT subject but with different scope will be also useful for possible collaborations, in particular with IAEA.

The main action lines foreseen for the SEAKNOT external dissemination are reported in the following list:

- **Two editions of the European Review Meeting on Severe Accident Research (ERMSAR) Conference**, planned to be hosted by KTH Stockholm in May 2024 and CIEMAT Madrid in 2026, under the general SNETP/NUGENIA framework, in the WP4.2 activities. The ERMSAR conference is a well-known opportunity, from its first edition in 2005, for world-wide researchers to discuss about R&D priorities in the SA field. It is foreseen that at least two editions of this event will be held in the 4 years of the project. As main K2T action, a final report about the two ERMSAR editions, summarizing the major outcomes from these initiatives, is expected to be published, together with the open literature proceedings of these two Conferences.
- **Two editions of the SAP short course**, hosted by UPM (June 2023) and FZJ (summer 2025). This SAP course, from its first edition in 2006, represents the only international course focusing on the dissemination of the knowledge gained on SA phenomenology in the last two decades.
- **A new edition of the textbook “Nuclear Safety in Light Water Reactors - Severe Accident Phenomenology”**, edited in 2011 under the frame of the EU SARNET FP6 project.
- Scientific publications in peer-reviewed journals and national/international conferences, as discussed in the following.
- Drafting and distributing of an electronic newsletter, issued by LGI, with the input of the Coordinator and the ExB, at least at the end of each year of the project to inform stakeholders of the project’s progress. It will include a word from the SEAKNOT coordinator, a specific highlight per WP, relevant news, relevant workshops, publications and conferences.
- Participation to relevant public events, as identified in this C&D strategic plan and by the SEAKNOT ExB.
- Preparation and issue of dissemination paper materials as flyers, brochures and other with information for the progress and major outcomes of SEAKNOT, intended for free distribution at annual conferences of universities, meetings of national nuclear societies of the partners’ countries and other, international conferences and forums, during the site NPPs visits of members of the partners’ teams, etc.

### 3.4.1 Conferences and Workshops

General SEAKNOT presentations and posters will be initially prepared (and up-dated) in sub-WP4.4 for partners, describing the project.

The progress of the activities within the SEAKNOT project will be periodically presented mainly in international scientific conferences or workshops related to SA area. These common presentations will address both the general context and the progress of the whole project (in that case they will be managed by the Coordinator and ExB with the WP4 help), or some specific technical results (in that case they will be directly managed by the corresponding WPL).

The plan of future common presentations will be periodically analyzed by the ExB and by the WP4 members during the WP4 meetings. For general publications by individual organizations, these will go through the approval of ExB.

Furthermore, it has to be highlighted that, as both OECD and IAEA representatives will join the SEAKNOT AB, their requests for SEAKNOT contributions to events related with the project objectives will be considered of high priority.

SEAKNOT plans to participate in 10 events by the end of the project, as well as to produce in between 10 and 20 journal papers and 25 conference contributions. Target events and key journals to achieve these C&D goals are reported in Table 4.

**Table 4: Identified relevant events and journals**

Event title	Journal title
<ul style="list-style-type: none"> <li>• <b>ERMSAR Conference</b></li> <li>• Eurosafes Forum (annual)</li> <li>• EPRI International Decommissioning Workshop (Europe/US) (annual)</li> <li>• NURETH Topical Meeting</li> <li>• ICONE Conference</li> <li>• EU FISA Symposium</li> <li>• SNETP Forum</li> <li>• NENE Conference</li> <li>• NUTHOS Conference</li> <li>• SNE Annual Meeting Conference</li> <li>• ENS NESTet Conference</li> <li>• ANS Meetings</li> <li>• ICAPP, ATH and ARS Embedded Topical Meetings</li> <li>• ENS TopSafe Conference</li> </ul>	<ul style="list-style-type: none"> <li>• Nuclear Engineering and Design</li> <li>• Nuclear Science and Engineering</li> <li>• IEEE Transactions on Nuclear Science</li> <li>• Annals of Nuclear Energy</li> <li>• Progress in Nuclear Energy</li> <li>• EPJ Journal of Nuclear Science and Technology</li> <li>• Nuclear Science and Technology</li> <li>• Science and Technology of Nuclear Installations</li> <li>• Nuclear Technology</li> <li>• Energies</li> <li>• Journal of Nuclear Materials</li> <li>• Atw – Journal on nuclear power</li> <li>• International Journal of Heat and Mass Transfer</li> <li>• European Journal of Physics</li> </ul>

### 3.4.2 Publications in Scientific journals

In complement to the common conference presentations, the publication of technical papers will be recommended in scientific journals. The project, as indicated in the Specific Rules [5] *Communication, Dissemination, Open Science and Visibility (Article 17)* that beneficiaries have to follow in projects funded or co-funded under Horizon Europe, will aim to release scientific publications in open access journals. Beneficiaries must ensure open and immediate access to the final, reviewed version of a scientific publication (articles, monographs, proceedings, etc.) produced as part of the funded project, and in particular they must:

1. Deposit an electronic copy of the published version, or of the post-print, in a “trusted repository” (e.g., institutional repository of the single organizations and Zenodo), at the latest at the time of paper publication.



2. Give immediate open access to the full-text (no embargo); the document must be released under the latest version of the Creative Commons CC-BY License, or equivalent. For possible monographs, the license may exclude commercial uses and derivative works (Licenses CC BY-NC, CC BY-ND).
3. Provide, through the repository metadata, information on all the tools (e.g. DOI for all publications produced by the research) necessary to validate or reuse research results. References to the Grant must be included in the metadata. Metadata must be open under CC 0 license, or equivalent.

Based on the requests of an open access, authors can publish:

1. Articles on the ORE-Open Research Europe publication platform <https://open-research-europe.ec.europa.eu/>, created by the Commission and reserved for the beneficiaries of EU grants. It meets all OA requirements in the mandate. Costs are covered by the EU, it allows for deposit in an institutional repository, immediate access to all versions of the article and open peer-review;
2. Articles in an Open Access journal. This option involves costs, an author can deposit the published version in a trusted repository. Only the costs incurred for publication in pure OA journals are refundable, not those for hybrid journals.
3. Articles in traditional journals / monographs. In this case the author must retain the intellectual property rights in order to meet the Open Access requirements (contractual clause allowing for the deposit of the post-print version in the institutional archive without embargo, under CC-BY, or CC BY-NC / ND Creative Commons License for monographs).

As stated in the *Art. 17.2 Visibility — European flag and funding statement* of [4], unless otherwise agreed with the granting authority, communication activities of the beneficiaries related to the action (including media relations, conferences, seminars, information material, such as brochures, leaflets, posters, presentations, etc., in electronic form, via traditional or social media, etc.), dissemination activities and any infrastructure, equipment, vehicles, supplies or major result funded by the grant must acknowledge EU support and display the European flag (emblem) and funding statement (translated into local languages, where appropriate).

Furthermore, as stated in the *Art. 17.3 Quality of information — Disclaimer* [4], any communication or dissemination activity related to the action must use factually accurate information. Moreover, it must indicate the following disclaimer (translated into local languages where appropriate): *“Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or [name of the granting authority]. Neither the European Union nor the granting authority can be held responsible for them.”*

### 3.5 Partners' activity reports

All the organizations partners of the SEAKNOT project will contribute to the C&D activities through all the opportunities provided in their own C&D plans. The basic principle will be the mention of their involvement and activities in SEAKNOT in their periodic activity reports and on organization websites.

This C&D action line will be completed by each partner during any major event related to project matters by the distribution of SEAKNOT presentation leaflets or newsletters, the presentation (or mention) of the SEAKNOT objectives and results and some general poster exhibitions.

Furthermore, a template will be prepared by WP5 PROC in which each individual organization will report on its progress in the different WPs, containing basic information, as the percentage of achievement of what supposed to do in each WP and a brief description (few lines) of the achieved progress.





### 3.6 Education and training

The support to the development and sustainability of nuclear competences at Union level is one of the EURATOM goal in Horizon Europe considering the present situation of nuclear energy in Europe asking for a continuing effort in the field of E&T, aimed to assure a qualified workforce in the next decades. Therefore, a special attention will be given during SEAKNOT to disseminate the related knowledges towards the young researchers in the SA field and towards the MSc/PhD students of European universities where dedicated nuclear technology and/or nuclear safety courses are offered.

These education activities will be focused on MSc and PhD students, but they will be open also to young researchers in the SA field. The main actions will be:

- **An internal mobility programme** for young researchers and MSc/PhD students finalized to the secondment in the laboratories or offices of the project partners (Task 4 of sub-WP4.4). Additionally, the presence of the SEAKNOT young researchers in international conferences, workshops, and seminars to disseminate some SEAKNOT results, will be also supported. In both cases, the target for these actions is “*young PhD students and researchers from SEAKNOT organizations only*”. The mobility grants are due to “internal mobility”: only personal or students from SEAKNOT partners will be eligible to be granted for these actions (into a SEAKNOT partner laboratory or for a conference/workshop related to the project matters).

About the selection of the internal grants, after the Project KOM, Coordinator and WP4 leader will prepare indications for the partners and ExB will take a decision about the procedure. The proposal to be made will be likely based on a simple decision flow:

- Proposal and grant request by the student/young researcher, also signed by her/his organization.
  - Check of the technical bases of this request by the WP4 WPL and the SEAKNOT coordinator.
  - Proposal for a SEAKNOT ExB decision.
  - ExB decision on acceptance/reject to be made.
- **Two editions of the SAP short course** (one week) will be organized in the sub-WP4.1 activities. This SAP course, from its first edition in 2006 organized by CEA Cadarache (F), represents the only international course offered to train or to complete the training of person recently involved in the SA field, focusing on the dissemination of the knowledge gained on SA in the last two decades with a program covering the SA phenomenology, progression and mitigation in current LWRs of Gen. II and III, but also the different design solutions in Gen. III NPPs and SMRs. Lectures for these Courses will be given by international experts from major nuclear institutes, industries and universities working on the SA topic, with a strong involvement of the SEAKNOT partners. A special focus will be on the Fukushima-Daiichi Severe Accident, but the course will also include background lectures on NPP safety and SA codes and their uncertainties will be also addressed.

The organization of a SAP course edition but as a residential “SA Campus” for one week duration is also foreseen and the discussion about this new kind of E&T opportunity will be performed inside the ExB.

- **A new edition of the textbook “Nuclear Safety in Light Water Reactors - Severe Accident Phenomenology”**, edited in 2011 by Bal Raj Sehgal [1], under the frame of the SARNET FP6 project, is foreseen. This reference textbook is at the moment the only one-step resource on how to assess, prevent, and manage severe nuclear accidents in LWRs but needs updates on the latest thought on LWR nuclear safety and newly acquired knowledges on SA in the last decade. The new edition will be characterized by substantial additions and updates, stemming from the EU expertise gained after the Fukushima accident and from the SEAKNOT WP1, WP2 and WP3 activities.

The book will be a textbook for students and young researchers in the field and not a handbook or a compendium of all the research in the field, but rather it will be written to impart understanding and knowledge about the complex physics of a SA.



## References

- [1] SARNET, “*Nuclear Safety in Light Water Reactors - Severe Accident Phenomenology*”, ed. Bal Raj Sehgal, Elsevier Inc., 2012.
- [2] L. E Herranz, S. Beck, V.H. Sanchez-Espinoza, F. Mascari, S. Brumm, O. Coindreau, S. Paci, “*The EC MUSA Project on Management and Uncertainties of Severe Accidents: Main Pillars and Status*”, *Energies* 2021, Volume 14, Issue 15, 4473. 2021.
- [3] Annex 1 Part B “*Description of Work*”, May 5<sup>th</sup>, 2022, EC Grant Agreement Project N°1010603271, Project SEAKNOT “SEvere Accident research and KNowledge management for LWRS”.
- [4] “*Term and Conditions*”, May 5<sup>th</sup>, 2022, EC Grant Agreement Project N°1010603271, Project SEAKNOT “SEvere Accident research and KNowledge management for LWRS”.
- [5] Annex 5 “*Specific Rules*”, May 5<sup>th</sup>, 2022, EC Grant Agreement Project N°1010603271, Project SEAKNOT “SEvere Accident research and KNowledge management for LWRS”.

