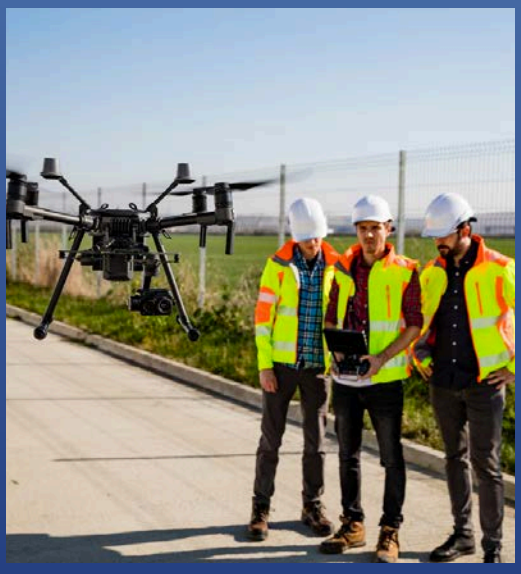
XS-ABILITY

APRIL
2025

XS-ABILITY NEWSLETTER

NEWSLETTER #1
RESHAPING THE FUTURE OF NUCLEAR DISMANTLING & DECOMMISSIONING

GET TO KNOW XS-ABILITY



Funded by the European Commission's Horizon Euratom Programme, XS-ABILITY is a 36-month project that tackles key challenges in Dismantling & Decommissioning (D&D) operations. One of the main issues in this field is the accurate assessment and continuous monitoring of the radiological status of nuclear sites — a critical factor throughout the entire D&D process.

To address this, the project focuses on developing state-of-the-art robotic solutions. Equipped with cutting-edge sensors, these robotic platforms are designed to access hard-to-reach areas and precisely detect difficult-to-measure radionuclides.

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XS-ABILITY OBJECTIVES

Our three core objectives are clear:

- **Protect workers** by reducing human exposure to radiation through the use of robotic and remote technologies.
- **Enhance the efficiency of D&D** processes by streamlining operations and reducing time and costs.
- **Promote sustainability** by developing long-term, environmentally responsible solutions for the nuclear sector.

By integrating compact nuclear instrumentation, advanced robotics, and AI-driven data management, XS-ABILITY delivers innovative, safe, and cost-effective solutions contributing to a more sustainable nuclear future. These robotic platforms are designed to incorporate radiological sensors, addressing remaining challenges in D&D operations — particularly the remote and mobile inspection of hard-to-access areas.

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PRESENTATION OF PARTNERS:

Collaboration is at the heart of our success. The consortium behind XS-ABILITY is a unique combination of cross-functional experts from nuclear instrumentation, robotic and artificial intelligence fields representative of the whole value chain. Together, we're paving the way for the next generation of nuclear solutions.

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PRESENTATION OF PARTNERS:

CEA (Commissariat à l'énergie atomique et aux énergies alternatives)

The French Atomic Energy and Alternative Energies Commission leads the project, bringing decades of expertise in nuclear energy and technology development. CEA's deep knowledge of nuclear safety and innovation drives the project's commitment to pushing the boundaries of nuclear decommissioning and sustainability.
https://www.cea.fr/

IFE (Institutt for Energiteknikk)

IFE, based in Norway, excels in research related to energy and nuclear technologies. As a key partner, IFE contributes critical insights into nuclear safety and environmental sustainability, focusing on the future of nuclear energy and its safe decommissioning.
https://ife.no/en/front-page/

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VTT (Technological Research Centre of Finland)

VTT is a leading research institution in Finland with extensive expertise in technology and innovation, particularly in robotics, artificial intelligence, and environmental monitoring. VTT's role is pivotal in integrating cutting-edge technologies to enhance the project's objectives.
https://www.vttresearch.com/en

CAEN (Costruzioni apparecchiature elettroniche nucleari)

CAEN, an Italian company, specializes in nuclear electronics and instrumentation. Their contribution to XS-ABILITY revolves around providing the essential technology and systems needed for nuclear monitoring, safety, and robotic applications.
https://www.caen.it

SCK CEN (Study Centre for Nuclear Energy)

SCK CEN, based in Belgium, is dedicated to nuclear research and safety. As a core partner, they focus on advancing the understanding of nuclear waste management and the safe dismantling of nuclear facilities, bringing expertise crucial to the project's success.
https://www.sckcen.be/en

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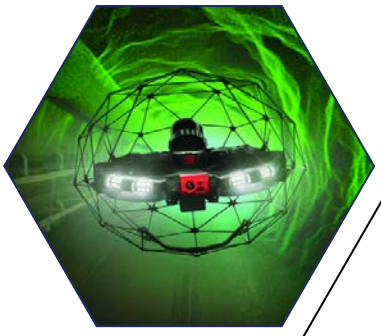

Flyability SA

Flyability, based in Switzerland, is a pioneer in the development of drones for challenging and hazardous environments. Their expertise in robotic systems, especially for confined spaces and nuclear decommissioning, plays a vital role in the project's technological advancements.
https://www.flyability.com

Sigma Ingegneria Srl

Sigma Ingegneria, an engineering consultancy from Italy, specializes in the design and implementation of technological systems for nuclear facilities. Their work ensures that XS-ABILITY's technological solutions are both efficient and safe.
https://www.sigmaingegneria.com/en/

DEVELOPIA foundation

Developia Foundation, the project's communication and outreach leader, manages the digital presence of XS-ABILITY. Their role is to ensure broad dissemination of the project's results and facilitate interaction with stakeholders across the nuclear, technological, and public sectors.
https://www.developiafoundation.org/en/

8 partners from 7 EU countries gathered to create the XS-ABILITY project achieving groundbreaking advancements in nuclear decommissioning and dismantling.

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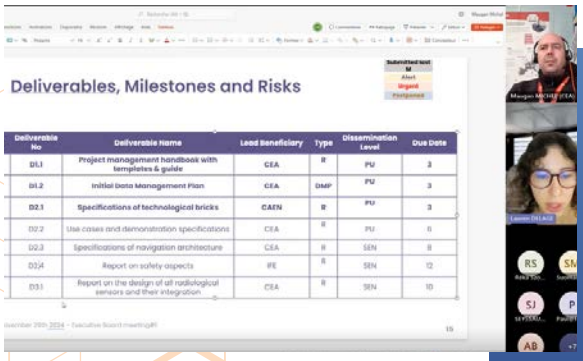

October 17-18, 2024: first online meeting

All project partners met online for the first time during the official Kick-Off Meeting, joined by the EU Project Officer. The two-day meeting, coordinated by CEA, provided a comprehensive overview of the project's objectives, structure, and upcoming activities. Moreover, each partner outlined their role and contributions, fostering collaboration, while technical solutions and alignment for the next steps were also discussed.

March 13, 2025: XS-ABILITY partners visit G2 reactor in Marcoule Nuclear Site (France) to advance nuclear safety and D&D strategies

This event marked a significant step forward in the project's mission to enhance nuclear safety and advance innovative D&D strategies.

The visit to the G2 Reactor, a decommissioned nuclear facility, provided the team with valuable first-hand insights into the technical challenges associated with nuclear D&D.

By exploring the site, project partners gained a clear understanding of the challenges they face and aligned their strategies with real-world conditions. This will be essential in ensuring that the XS-ABILITY project delivers practical and high-impact results.

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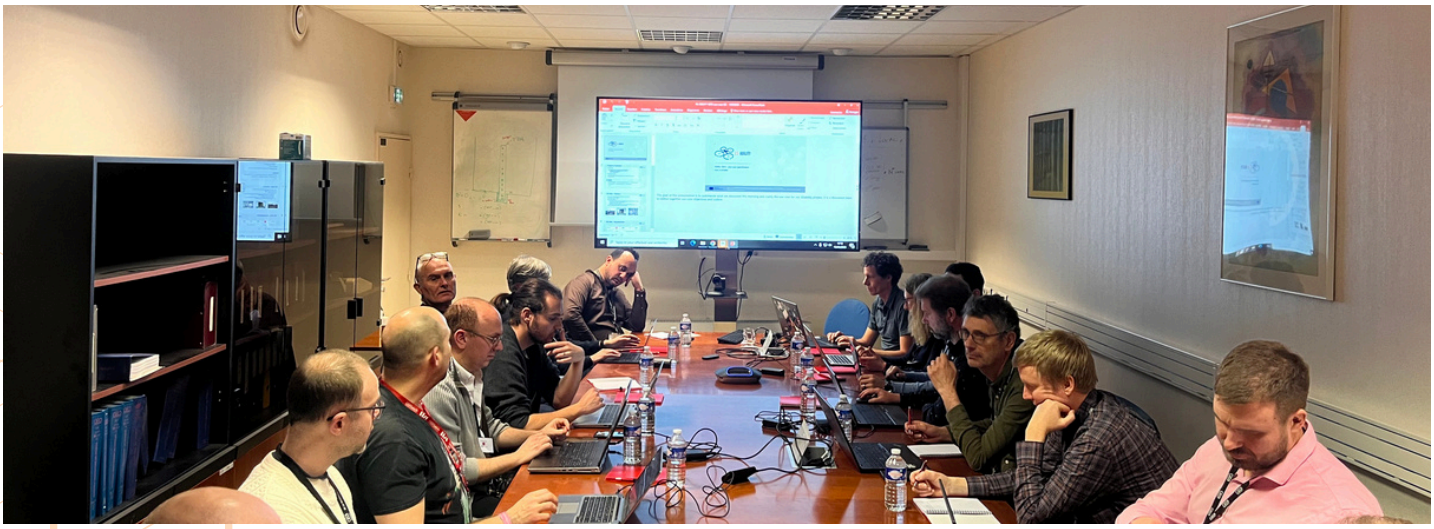

2nd General Assembly was held in Marcoule as well

These collaborative efforts will only grow more fruitful as time goes

In addition to the visit of the reactor, the 2nd General Assembly was the opportunity for partners to review the progress of key work packages and discuss the roadmap for the first year of the project, ensuring that the project's impact is felt across the nuclear sector for years to come. Special focus was placed on:

- **"Requirements analysis: specifications and safety"** – ongoing efforts to ensure safety and regulatory requirements are fully understood and integrated into the project's framework.
- **"Demonstration and use cases"** – using insights gained from the G2 Reactor visit to shape realistic test cases and demonstrations for the project's innovative solutions.

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EVENTS PARTICIPATION:

XS-ABILITY at ERF2025

From March 25-27, **XS-ABILITY, represented by our partner IFE, participated in European Robotics Forum 2025** in Stuttgart, Germany, uniting 1,500 experts under the theme: **"Boosting the Synergies between Robotics and AI for a Stronger Europe"**. The event aligned perfectly with our mission to enhance accessibility through AI and robotics.

Highlights included:

- 50+ workshops and keynotes on AI-powered robotics.
- The KIRO conference, supported by BMWK and BMBF.
- Exhibitions, site visits, and networking with leaders like Fraunhofer Institutes and Cyber Valley.

In general, ERF2025 reinforced our commitment to ethical AI and inclusive technologies. We're excited to apply the insights and connections gained to drive innovation and inclusivity.

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Read articles on the XS-ABILITY website:
www.xs-ability.eu/news/

XS-ABILITY has received funding from the European Union's Horizon Europe EURATOM Research & Innovation program under agreement #101166392. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them.

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