



**SEAKNOT**

# **The SEAKNOT Project**

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**SEAKNOT – 1<sup>st</sup> Open Workshop**

**Becker Technology GmbH (Hochheim am Main, Germany)**

**Sept. 30<sup>th</sup> – Oct. 2<sup>nd</sup>, 2025**



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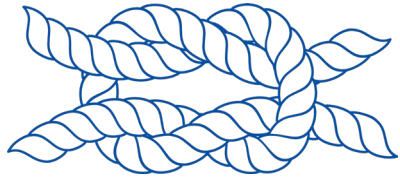
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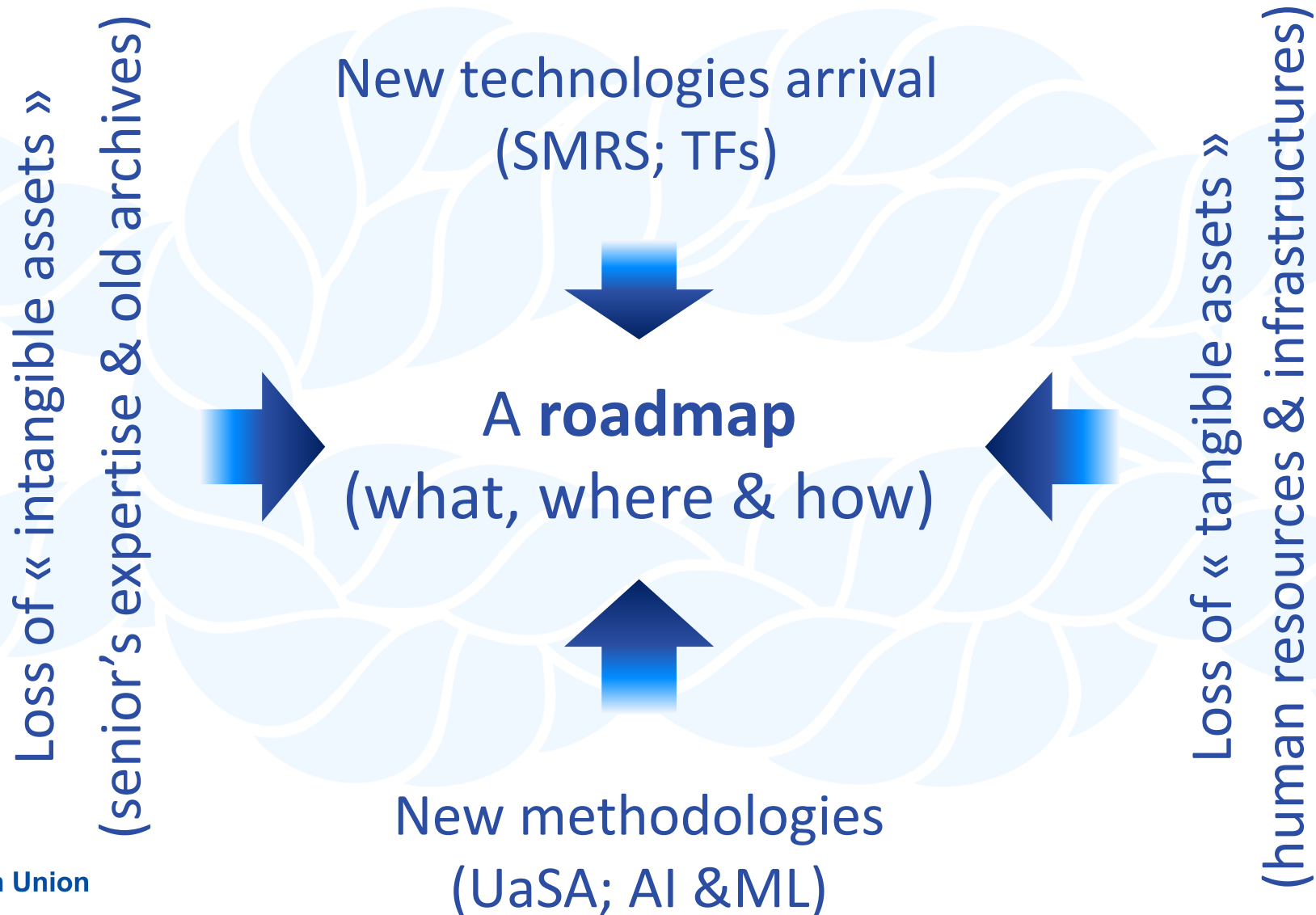
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# Why?



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# The SA Crossroad



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# The "Sea-Knot"



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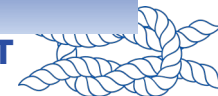


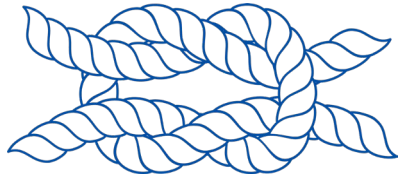
# The Needs

- A sound and critical analysis of the current knowledge.
- An identification of « meaningful » research needs.
- An efficient transfer of background and skills to Ygs.



**Efficiently mitigate &  
practically eliminate SA consequences**





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# How?



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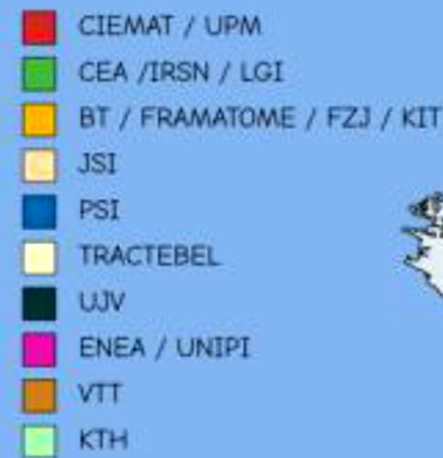
# The Resources

- Oct., 2022 – Sept., 2026.
- Total cost: 2.725 M€ (79% EU).
- Human resources: 260 p-m.

+

**AB  
EUG!**

and



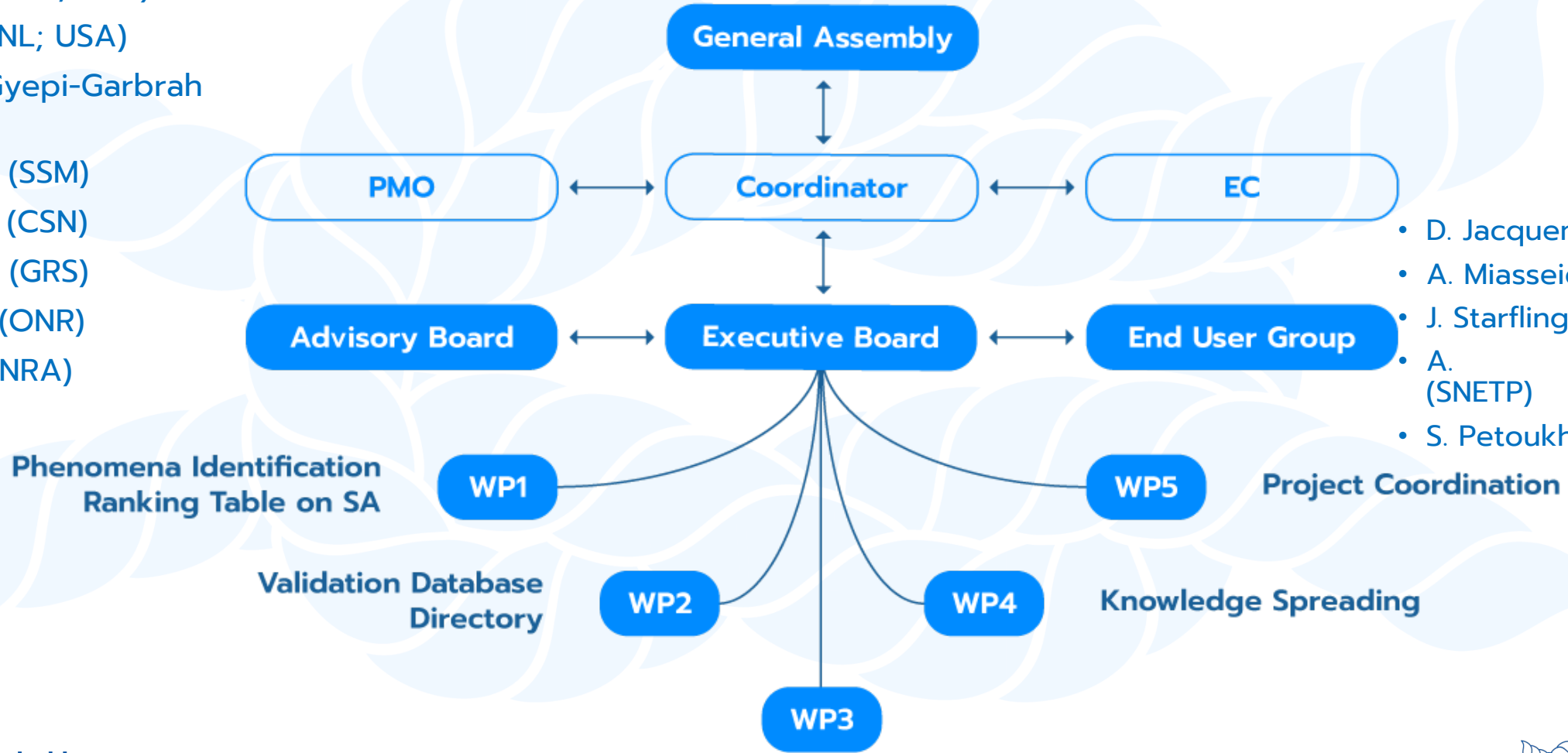
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# The Instruments

- H. Esmaili (NRC; USA)
- D. Luxat (SNL; USA)
- S. Gyepi-Garbrah (CNSC)
- P. Isaksson (SSM)
- F. Robledo (CSN)
- T. Hollands (GRS)
- A. Tehrani (ONR)
- J. Kaneko (NRA)



- D. Jacquemain (NEA)
- A. Miassidov (IAEA)
- J. Starflinger (ENEN+)
- A. Al-Mazouzi (SNETP)
- S. Petoukhov (CNL)



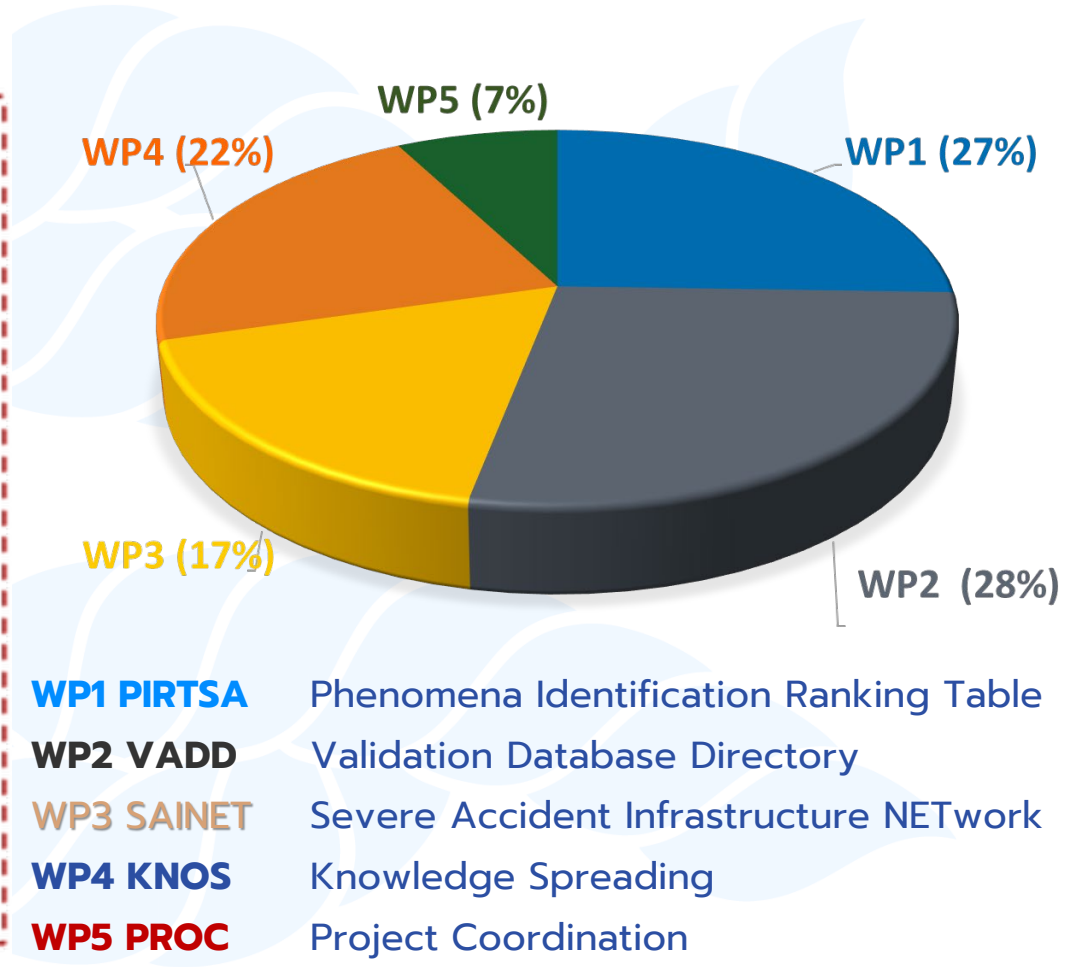
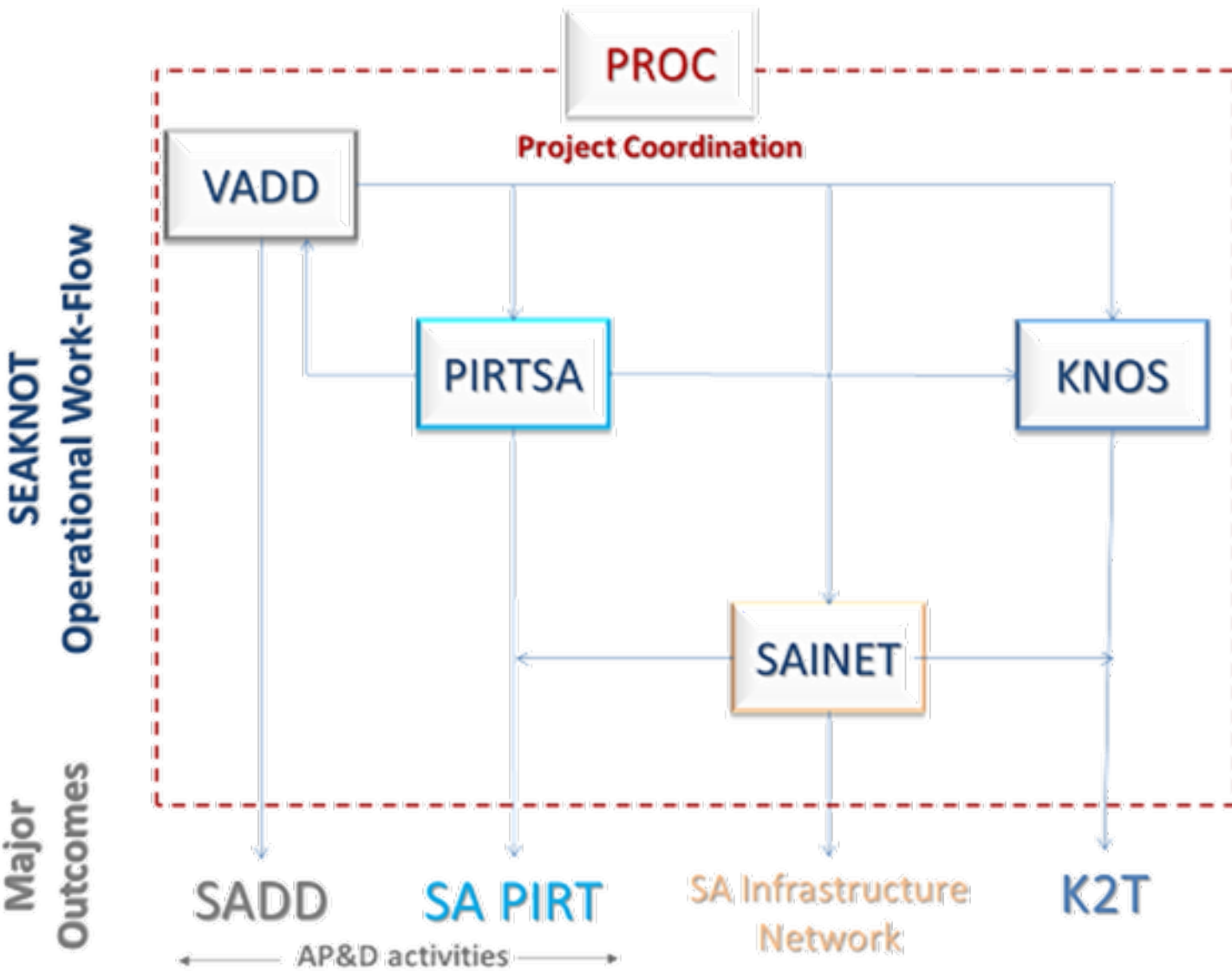
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Severe Accident experimental  
Infrastructure NETWORK

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# The Orchestra







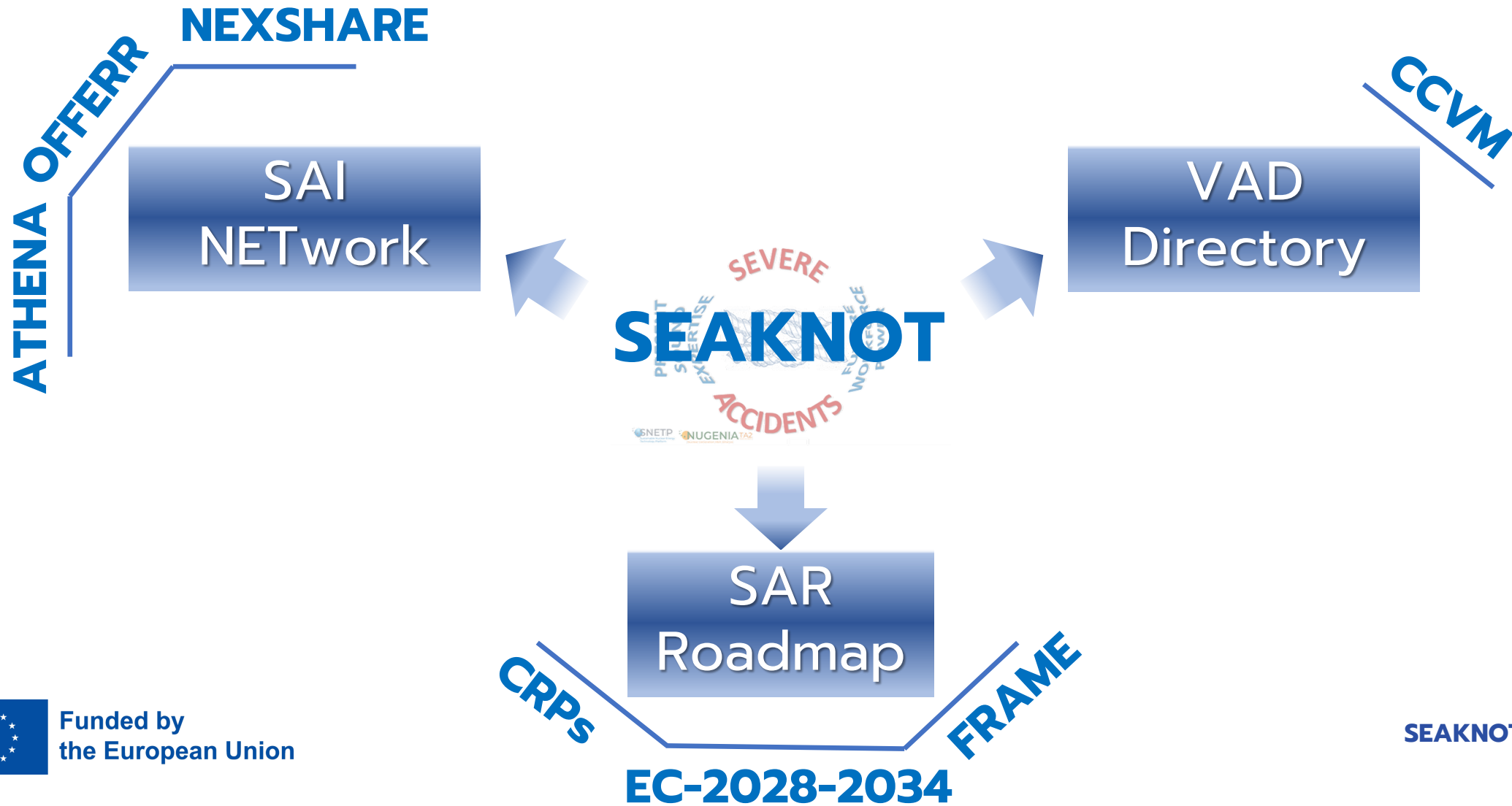
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# What for ?



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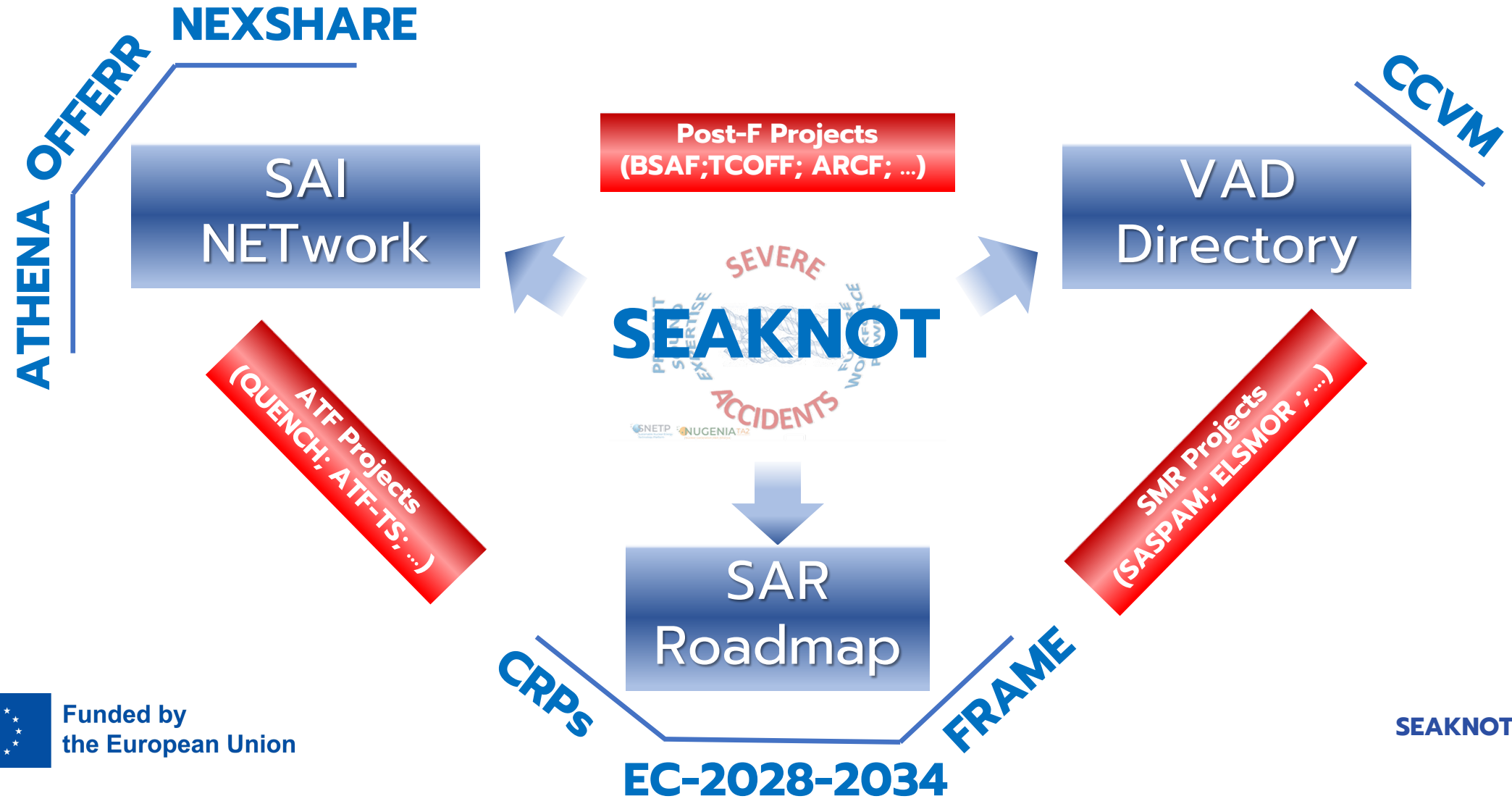
# Technical Outcomes



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# Technical Outcomes



# E & T Outcomes

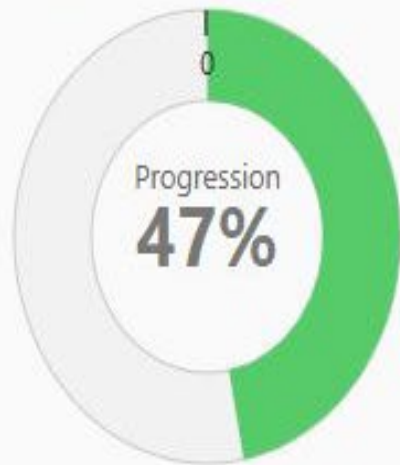


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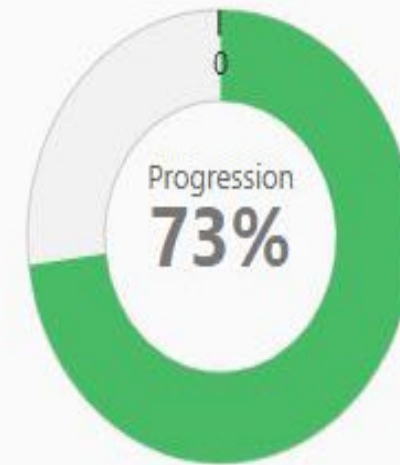


# How are we doing?

## Deliverables

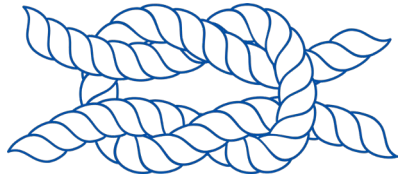


## Milestones



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**Where more?**



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- 
- “Systematization of knowledge on severe accident phenomena and experiments for preservation and transmission”, NENE 2024 Conference, Portoroz, 9 - 12 Settembre 2024.
  - “Adaptation of the PIRT methodology to the Severe Accident domain”, 50ª Reunión Anual de la Sociedad Nuclear Española SNE, Cordoba (ES), 9 – 11 Ottobre 2024.
  - **“Inverse Uncertainty Quantification in the Severe Accident Domain: Application to Fission Product Release”**, Nuclear Engineering and Design, March 2025.
  - **“SEAKNOT: Looking Ahead of Severe Accident Research”**, VSI ERMSAR 2024, ANUCENE-D-24-01009, 2025.
  - “Looking ahead to severe accident research”, EPJ Nuclear Sci. Technol. 11 28 (2025), DOI: 10.1051/epjn/2025025.



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- 
- “Fission Product Release Modeling in MELCOR: an Extension of the Validation”, The Second Saudi International Conference on Nuclear Power Engineering (SCOPE-2), Dhahran, Saudi Arabia, 2-6 November 2025.
  - “Identification of European Experimental Facilities for Severe Accident Research within EU SEAKNOT-Project: Analysis and Mapping”, EPJ Nuclear Sci. Technol. (submitted).



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**And ?**



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# Distinctive Features

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- SEAKNOT: « Shot » to the entire SA domain.
- SEAKNOT: Based on ROBUST BACKGROUND.
- SEAKNOT: Young scientists/engrs as KNOT « sparkers ».
- SEAKNOT: « Minimum partners set ».
  - Multi-disciplinary
  - Organization diversity (industry; TSO; RC&U)
- SEAKNOT: Not a usual research project; other needs apply.



- SEAKNOT outcomes are highly valuable for the intl. Com.!
- SEAKNOT progresses as planned.
- Good visibility!
- Challenges ahead:
  - Consolidate & report the phase PIRT.
  - Wrap-up & preserve the SA DB.
  - Find how to fit with NEA; IAEA; SNETP; ...
  - Strengthening K2T of NUGENIA/TA2 »
    - ERMSAR-26.
    - SA Textbook update.



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# THANK YOU!

## Get in touch for more information

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All of the reports of the project will be available for download on the SEAKNOT website: [www.seaknot-project.eu](http://www.seaknot-project.eu)



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