

Webinar: Robots and Drones in Nuclear Decommissioning

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Digital twins and Ontology for Robot Assisted Decommissioning Operations

DORADO Partners

VTT

IFE

KIT
Karlsruher Institut für Technologie

Wai

ASNR **iUS**

AMPHOS²¹
SCIENTIFIC AND STRATEGIC ENVIRONMENTAL CONSULTING

SPIX
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sck cen

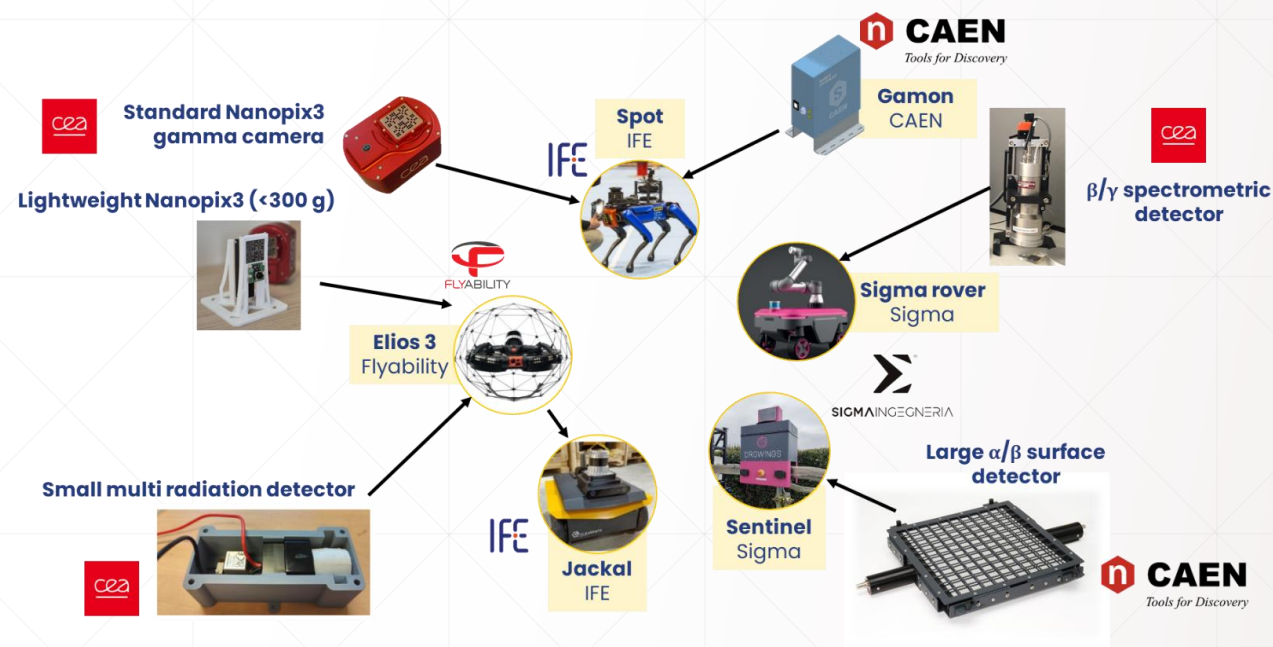
Catenda

EPRI

Key facts	Research goals	Work packages in brief
36 months 12 partners 8 countries 5 work packages		WP1 Prepare and manage project WP2 Finetune research goals WP3 Implement technologies WP4 Demonstrate on real use cases WP5 Train, exploit & standardize
Technologies		
Robotics Sensor fusion Data management Voice recognition Ontology BIM / 3D Artificial intelligence Dose estimation Mission planning	Final expectations 1) Integrate emerging digital technologies into one coherent platform to support decommissioning planning. 2) Extend decommissioning ontology and data transfer protocols to cover new use cases. 3) Describe extensible API to provide standardized data exchange between tools used in decommissioning planning.	

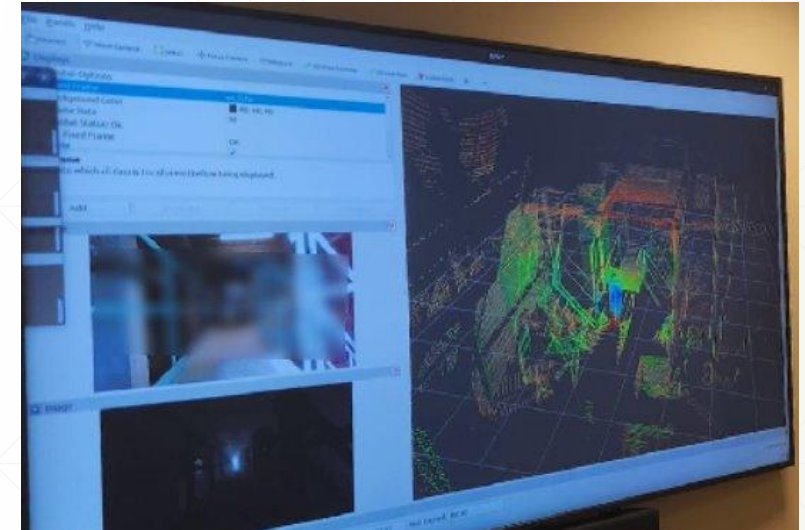
Euratom Project XS-ABILITY

- Main objective is to develop specific radiological sensors to be embedded on wheeled/legged UGV (Unmanned Ground Vehicle), as well as UAV (Unmanned Aerial Vehicle)
- Sister project to DORADO
 - XS-ABILITY develops hardware and DORADO focuses on data processing
 - Some common partners
 - Common activities in data collection and developing data interfaces.



Background for the webinar

- DORADO and XS-ABILITY projects run in parallel for three years. The projects are gradually shifting from technical development work to demonstrations.
- Both projects had a joint research mission to Belgium at SCK-CEN nuclear research centre in April to create BIM models of BR1 and BR3 facilities for demonstration purposes. Thank you SCK-CEN for hosting us!



Purpose of the webinar

- Present the status of technological development work.
- Present the results from SCK research mission as demonstrations of the technical development work.
- Discuss on applications and receiving feedback from end-users.
- Thank you IAEA for providing guidance and feedback throughout the project!

WEBINAR AGENDA

Welcome and overview of DORADO and XS-ABILITY projects Antti Raty	5 min
Safety considerations for innovative technologies in IAEA Duriem Calderin Morales	10 min
Point clouds and panorama captured by FARO Jose Ridao, KIT	10 min
UGV Jackal with mounted sensors Abdenour Benkird, IFE	10 min
Flyability's Elios Drone Paul Samuel, Flyability	10 min
Mapping thermal imaging to 3D Petri Honkamaa, VTT	10 min
Safe use of robotics systems and DORADO risk matrix Patrice Francois, ASNR	10 min
Questions and discussion	~ 30 min