Robotics and 3D Gamma-Mapping Technologies

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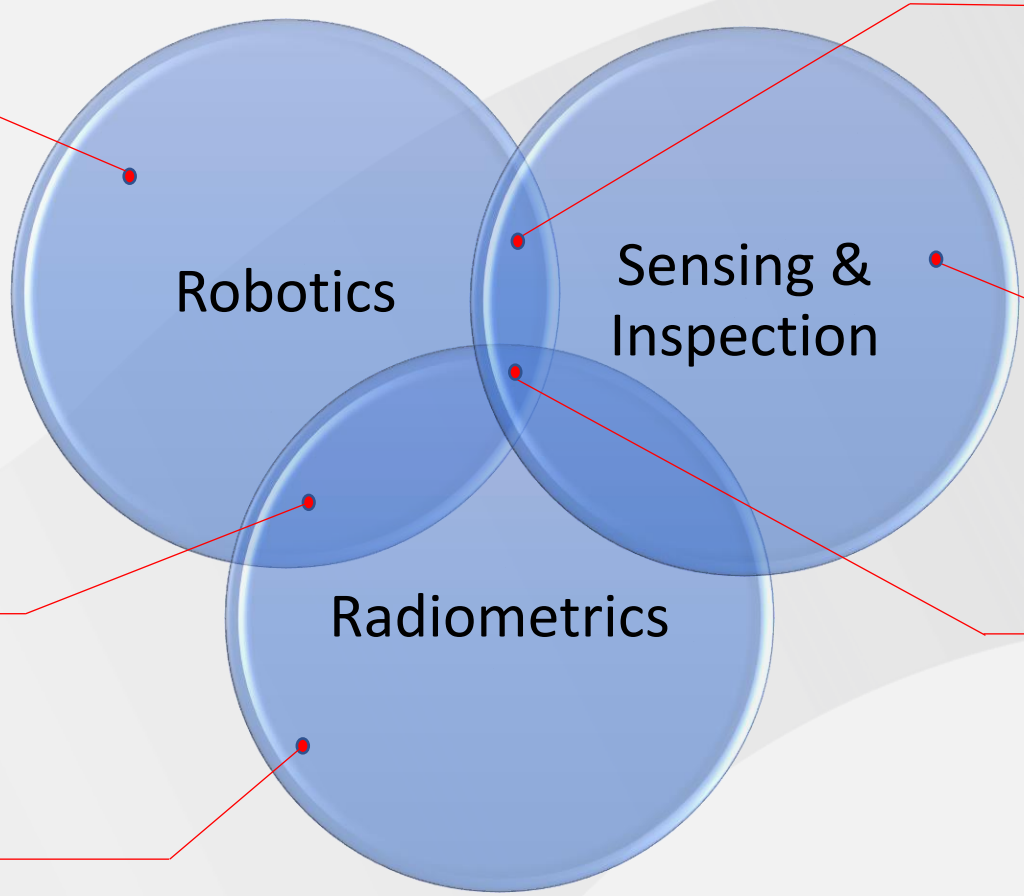
Nuclear Tech Trends



Teleoperation
Haptic Control
Remote Presence

Robotic X-ray NDT
Inspection systems

GPS Denied
Navigation
Crowd Monitoring
Data Collection for BIM

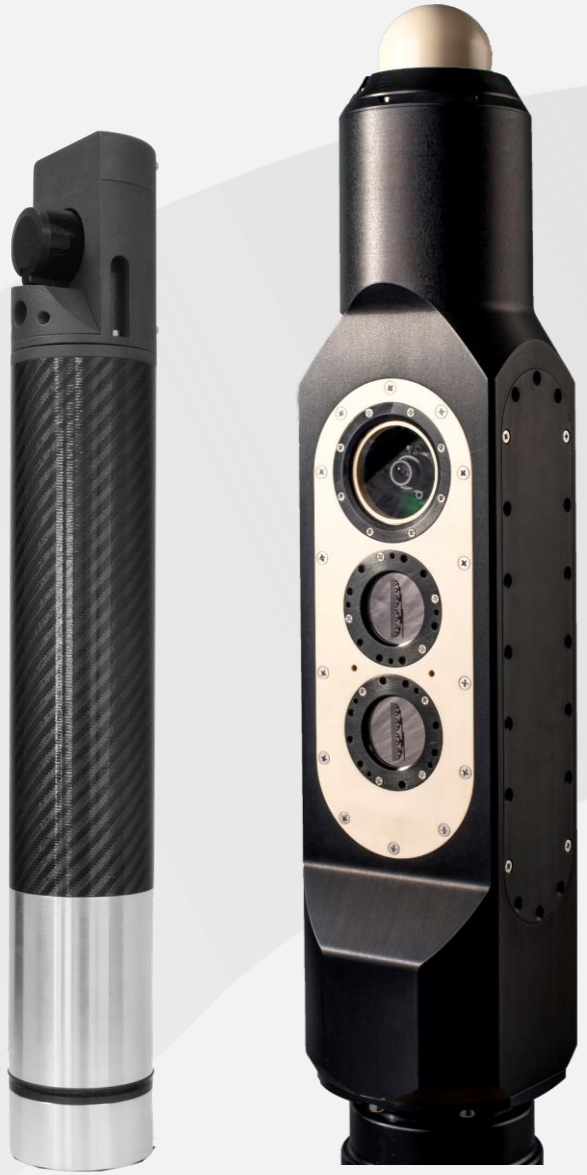
Robot & UAV deployed radiation sensing

Autonomous remote sensing systems

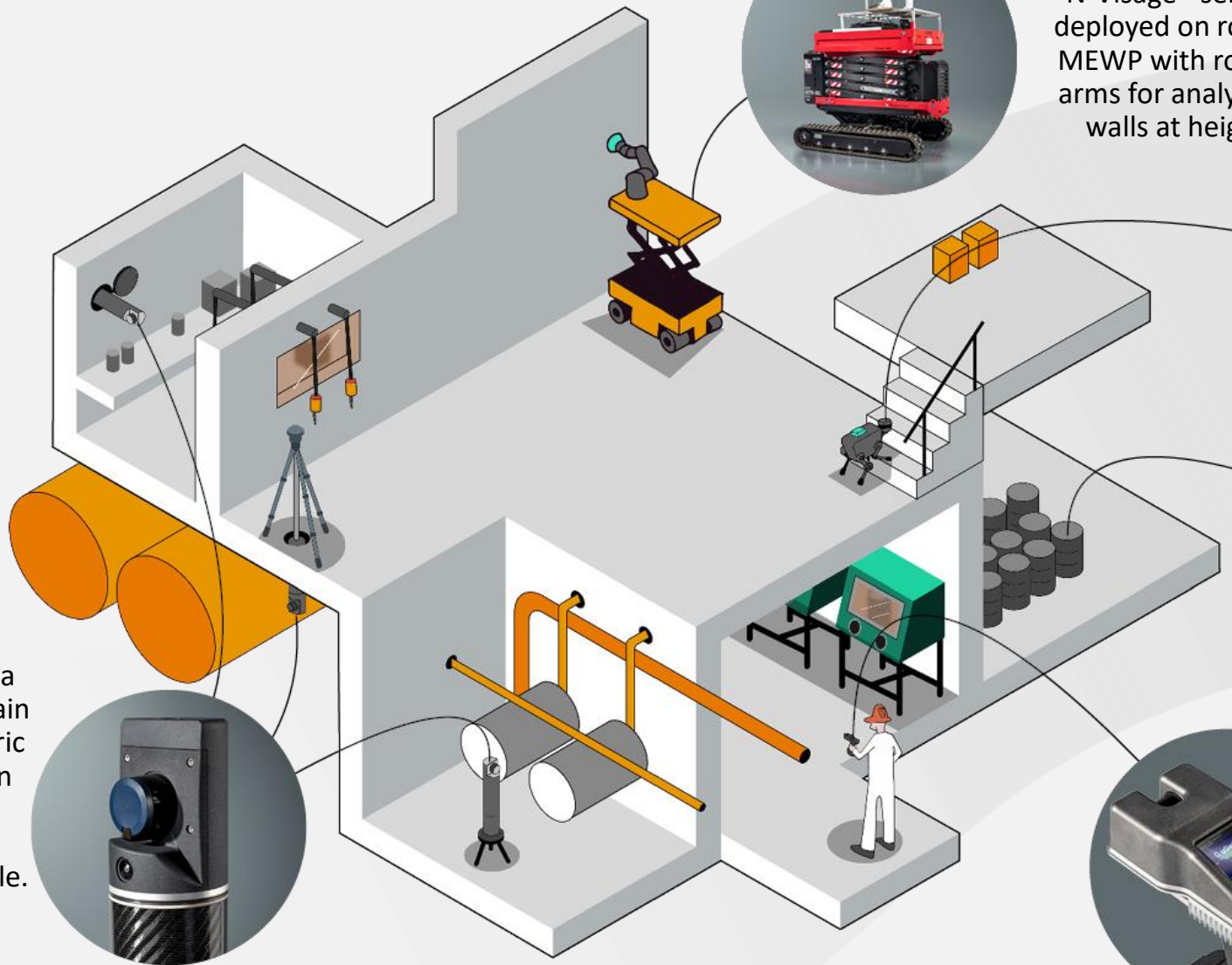
First of a kind radiation sensing and localisation products

Gamma Mapping - Trends

- Gamma imaging
  - Where is it?
  - What is it?
- 3D Gamma Mapping (N-Visage®)
  - Incorporates spatial data (BIM?)
  - And physics (digital twin?)
  - .. How much is there?
  - What if I…?
- Online 3D Gamma Mapping
  - Have I measured enough?
  - Where should I go next?

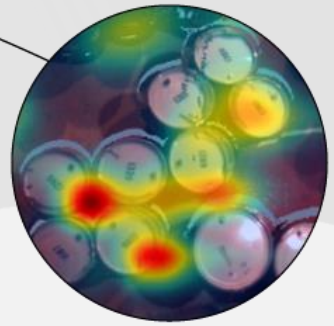


Integrated Digital
Site Characterisation



N-Visage® sensors deployed on robotic MEWP with robotic arms for analysis of walls at height.

Ground robot deployed with N-Visage® Sensors for challenging terrain applications.



Data output from N-Visage® scan of waste storage area.

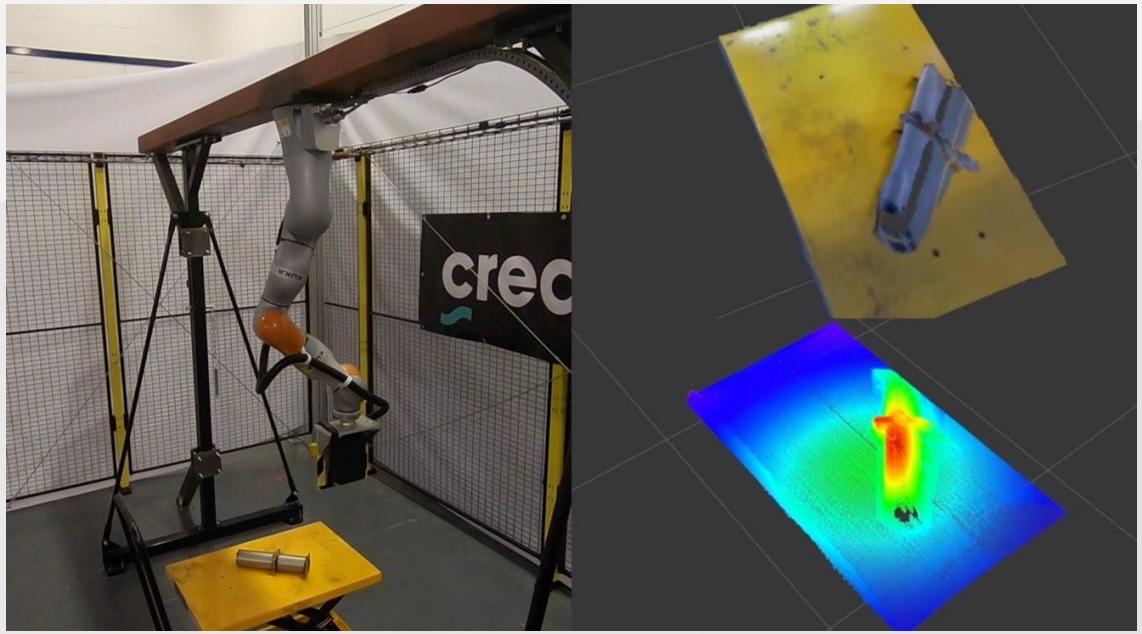
N-Visage® Gamma Imager used to gain 3D and radiometric data. Deployed on tripod, through walls and floors. Remotely operable.

Handheld N-Visage® Recon used to assess glovebox area by site inspector.

Example 1: Automated Nuclear Decontamination Cell (AND-C)

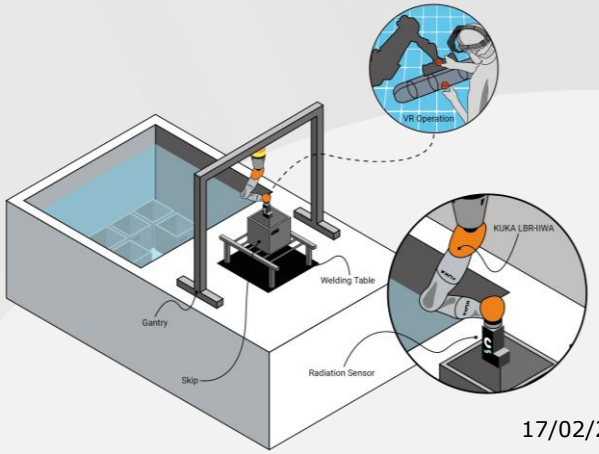
Remove workers from nuclear hazardous environments by providing:

- a robotics solution for automated item scanning
- a sensor pack for radiation source scanning and mapping
- a unique visualisation interface to display radiation data and control the robot
- an easy to deploy and maintain robotics solution



AND-C opens possibilities for:

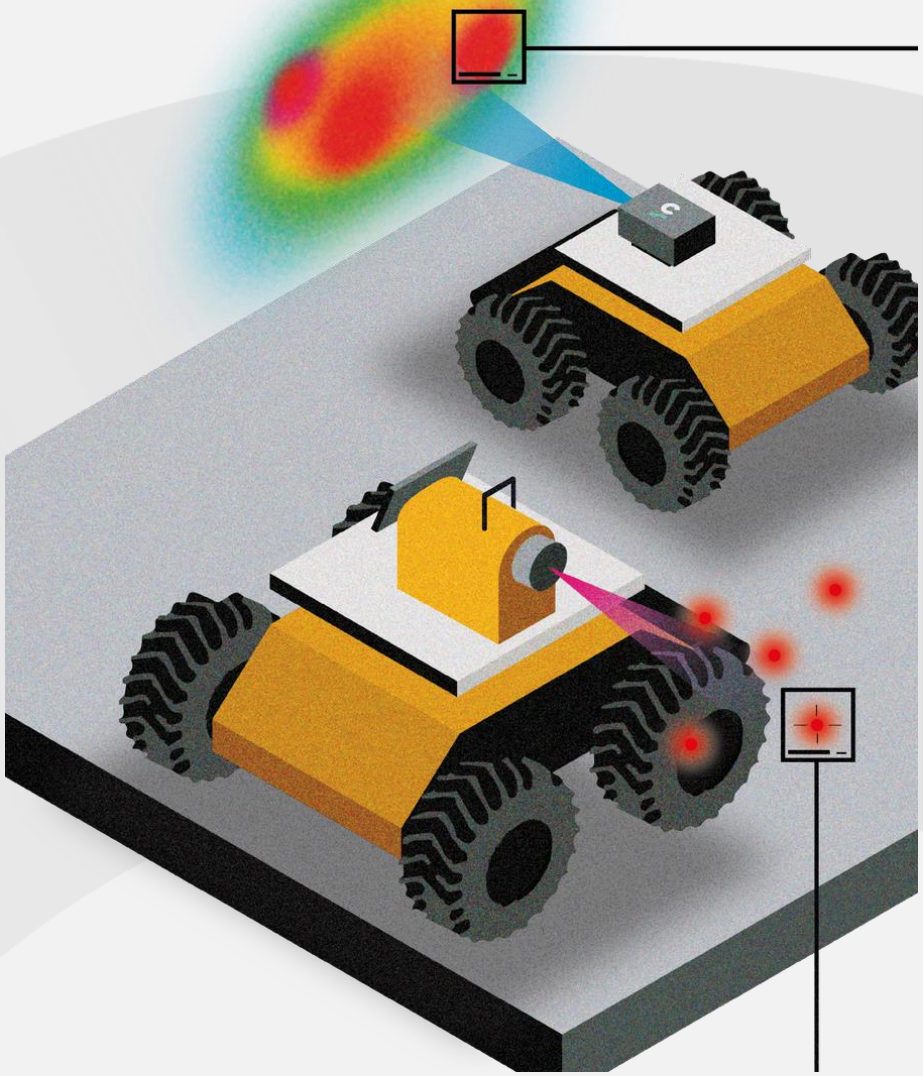
- teleoperated and/or automated robotics decontamination
- improved radiation characterisation
- improved waste management



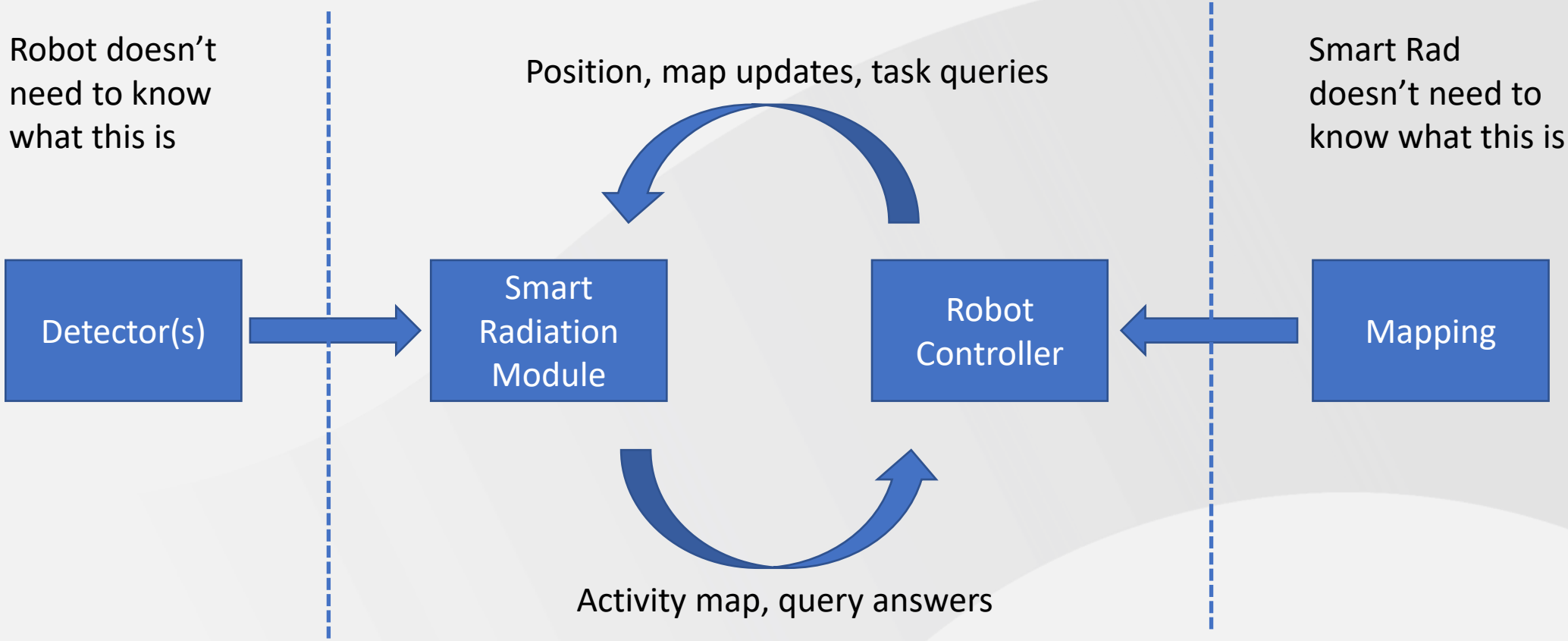
Example 2: Smart Radiation Project Objectives

Objectives:

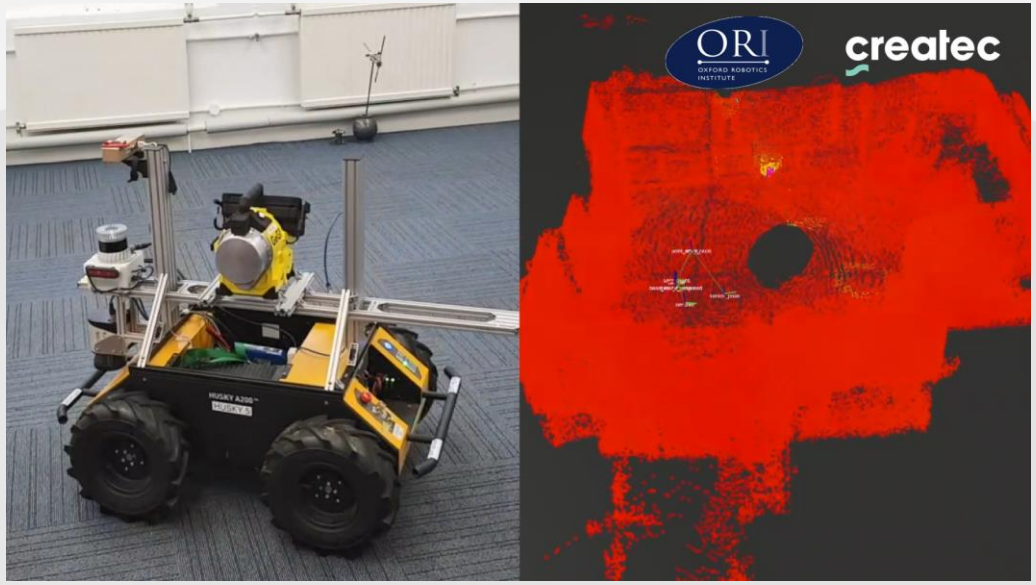
- Enable anyone to implement correct and optimal robotic radiometric systems
- Reduce integration time and cost
- Standardise data storage and processing across robots and sensors
- Remove requirement for radiation measurement expertise in integration process
- Enable goal-oriented rather than data-oriented mission parameters



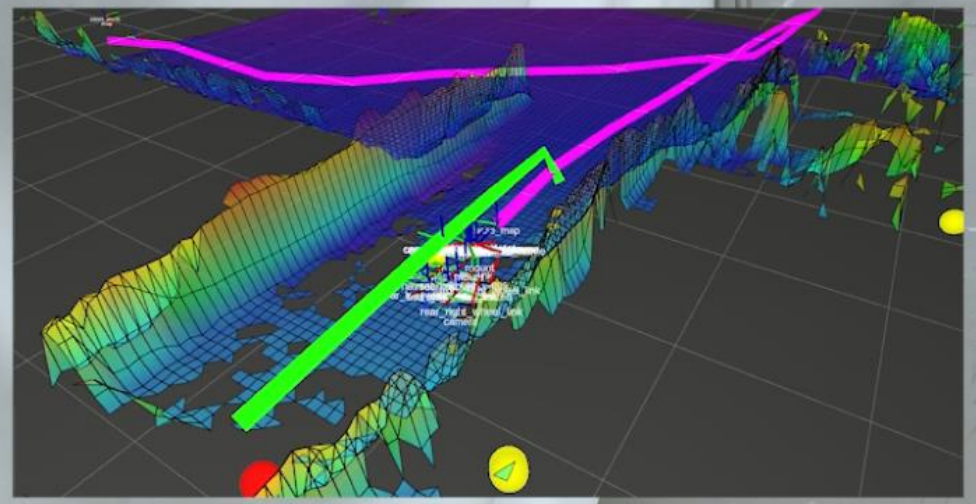
Technical Approach

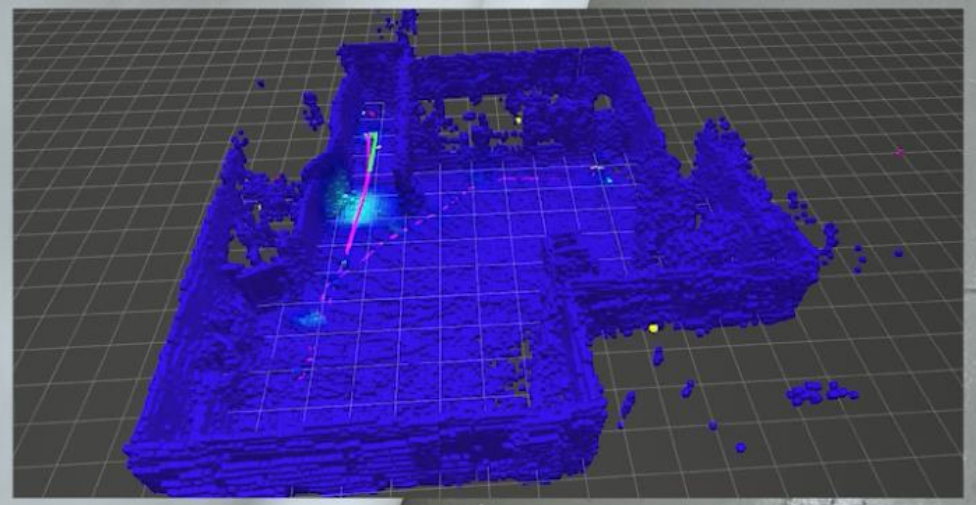


12 months, 5 robots, 3 sensors



Live Demo





Thank you!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