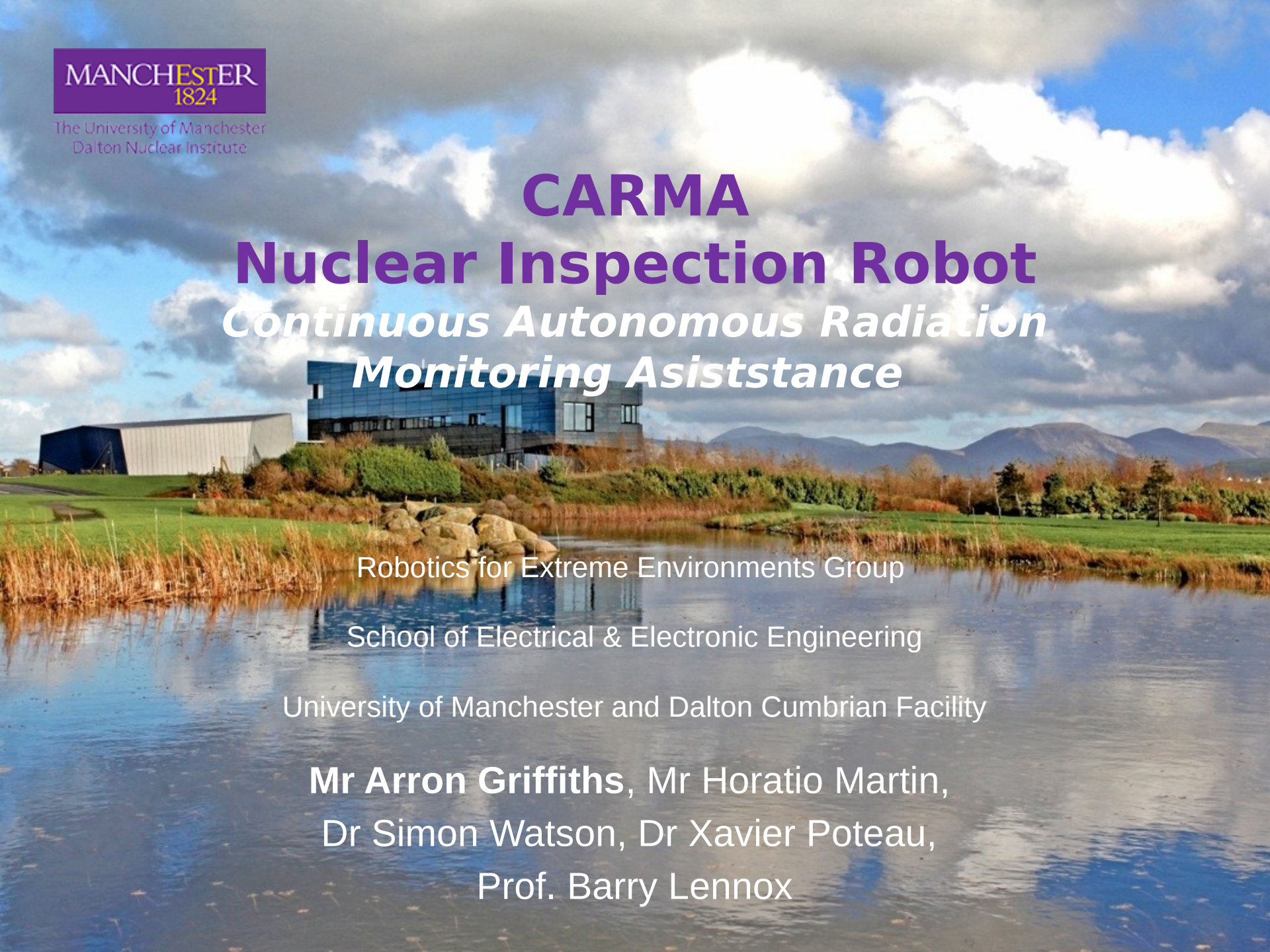

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CARMA
Nuclear Inspection Robot
Continuous Autonomous Radiation Monitoring Asiststance

Robotics for Extreme Environments Group

School of Electrical & Electronic Engineering

University of Manchester and Dalton Cumbrian Facility

Mr Arron Griffiths, Mr Horatio Martin,
Dr Simon Watson, Dr Xavier Poteau,
Prof. Barry Lennox

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Presentation Overview

- Nuclear facilities Challenges
- CARMA 1
- CARMA 2
- ROS Contribution

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UNIVERSITY OF BIRMINGHAM

brl
Bristol Robotics Laboratory

NATIONAL NUCLEAR LABORATORY

NDA
Nuclear Decommissioning Authority

UK Atomic Energy Authority

NATIONAL MARITIME RESEARCH INSTITUTE

Lancaster University

iit
ISTITUTO ITALIANO DI TECNOLOGIA

Sellafield Ltd

EPSRC
Engineering and Physical Sciences Research Council

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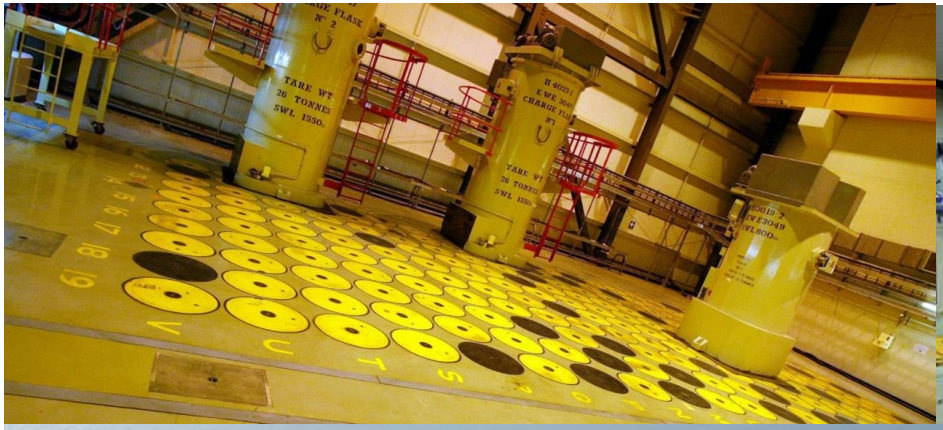
CARMA: The Challenge



Ref: https://www.gamechangers.technology/challenges/

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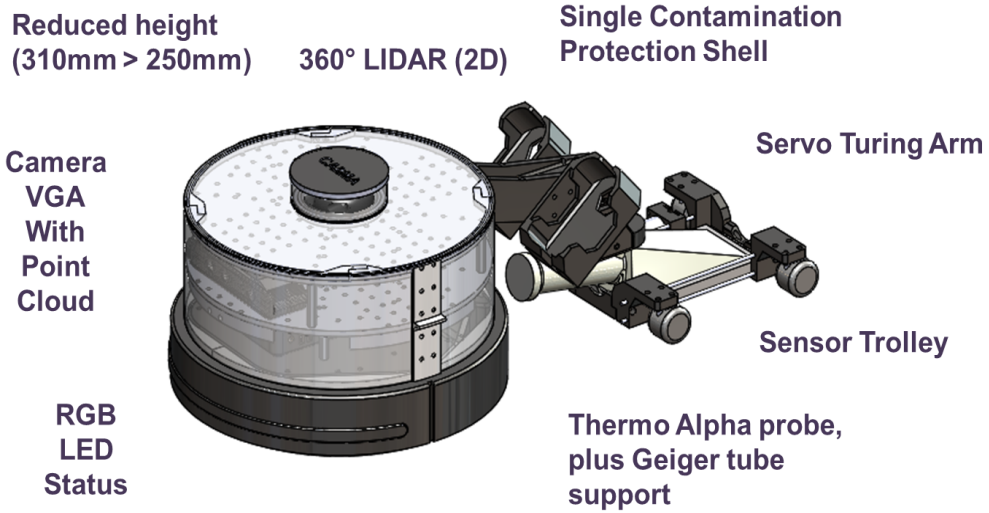
CARMA: Overview

Continuous Autonomous Radiation Monitoring Assistant

- Based on a commercially available Turtlebot 2 robot
- Design as a low cost replaceable semi-autonomous platform
- Fitted with alpha and gamma radiation sensors
- Primary role to continuously inspect large flat floor areas



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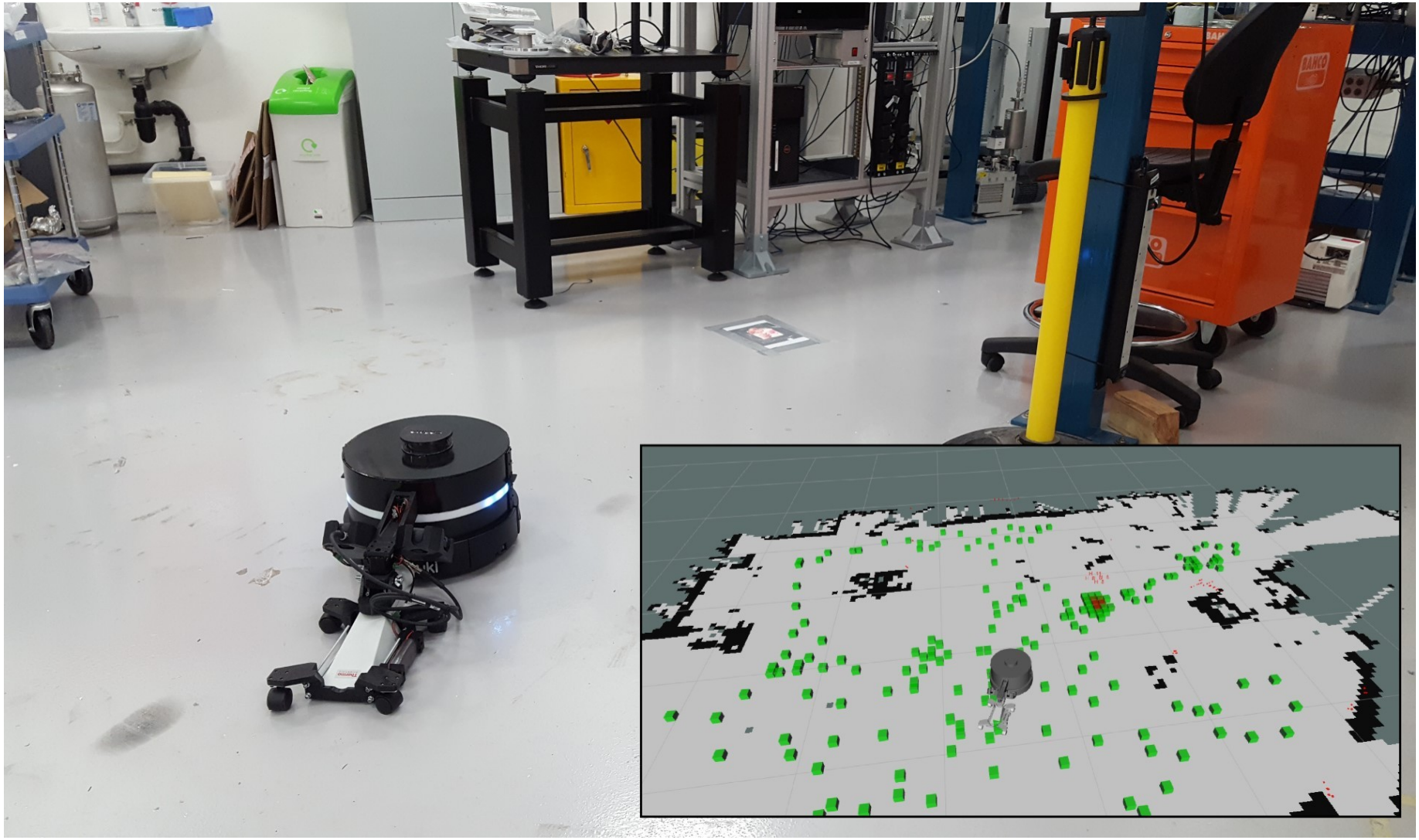
CARMA: Results



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CARMA 2: Overview

- **Based on a Clearpath, Jackal**
- **Design as more rugged and endurable version of CARMA system**
- **Fitted with 2x Thermo Radeye SX with 2x DP6 probes**

- ***Fitted with; 2x 20m (Hokuyo) LIDARS for full 360°FOV, 2x 3D point cloud (Orbbec) RGB camera, 1x Top down HD Web camera, 2x Super bright LED Spot Lights and 1x Ring of RGB LEDs for signalling Operators***

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CARMA 2: Video

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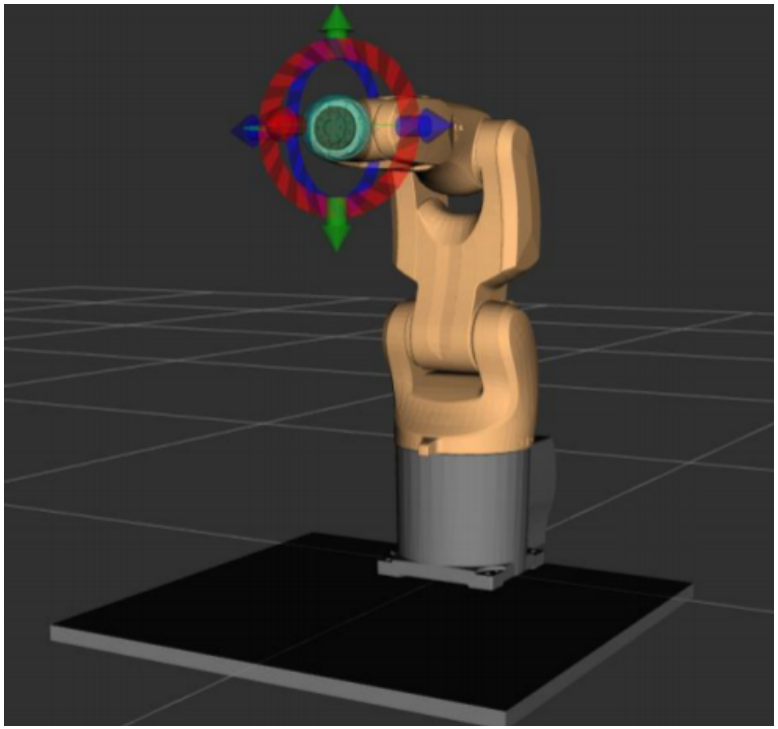
CARMA: ROS Contributions

UoMRobotics-Thermo

- Github – UoMRobotics
  Before the end of 2018

kuka-rsi-ros-interface



- Github.com/cjlh/kuka-rsi-ros-interface

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Thank you…

Please visit
http://uomrobotics.com
for more details on all our robots

contact me directly
https://about.me/arrongriffiths