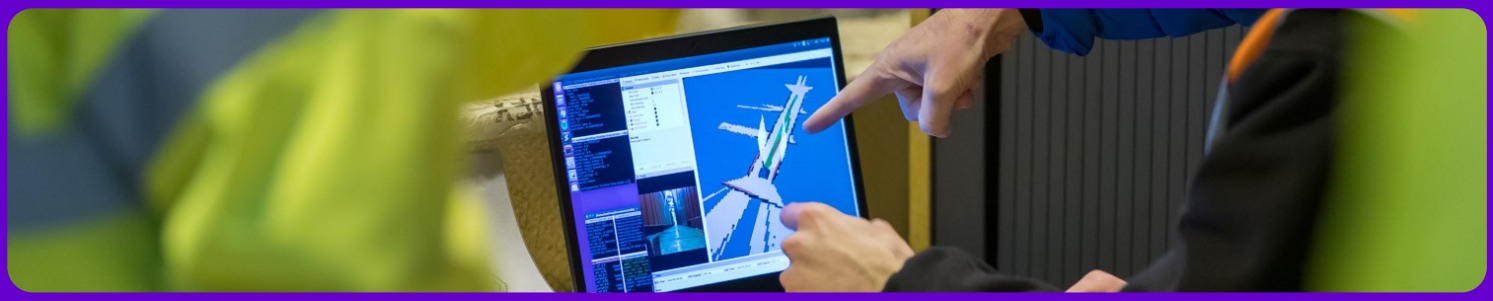
Technical use case: Inspection of confined spaces and construction of digital twins

MANCHESTER 1824
The University of Manchester



Inspection and maintenance of hard to reach areas often require confined space training, which is an inherently un-safe and expensive process, potentially leading to injuries and inefficient use of man-power. But it is integral for the safety and longevity of various structures. Using remotely operated robotic vehicles, it is possible to access confined spaces in various civil infrastructure environments such as basements, behind manufacturing equipment, through man-hole covers and bridges.

The VEGA robotic platform, is a tracked, ground-based ROV, capable of combining a variety of end-user defined sensing technologies to characterise a confined space, or an area through a confined space access. This can lead to informed and up-to-date digital twins.

Utilising laser scanners, 3D reconstructions can be completed, offering surveyors and design engineers insight into the need for additional structures or maintenance. The addition of environmental sensors such as thermometers, chemical sensors, ultrasonic thickness gauges and radiation sensors offer accuracy and reliability to the inspection

The VEGA has been designed to radiologically characterise ducts underneath radiation labs, take swabs/samples and, with the swapping of a radiation sensor for a variety of sensors, it could offer valuable insight for industrial surveyors, civil engineers decommissioning experts.

For more information on how we can help you with your robotic needs, please email:
matthew.nancekievill@manchester.ac.uk

Commercial opportunities are available by licence through our robotics group spin-out company Ice Nine Ltd, please email us at **info@ice9robotics.co.uk**

MANCHESTER 1824
The University of Manchester