

## Case Study

Company Name

Robotiz3d

Industry

Road Safety and  
Maintenance

Delivery Partner(s)

The Virtual Engineering Centre

### Background

Robotiz3d are a spin-out company from the University of Liverpool, focusing on utilising technologies such as robotics and AI for improving highway maintenance and the safety of drivers.

Robotiz3d develop smart, autonomous devices to quickly identify and repair small cracks in the road surface. This preventative approach to maintenance prevents the formation of larger damaging potholes, increasing road safety, while reducing repair costs and road closures.

### Challenge

Robotiz3d approached the Virtual Engineering Centre (VEC) via the LCR4 START project, to explore how additional technologies could support the company on its digital journey, developing the product concept further ahead of validation and commercial operation.

### Solution

The VEC worked with Robotiz3d to understand the business objectives and what current resources were available to them, recommending the development of an animation or short demonstrative video, which would best communicate their ideas and help support further business development.

The VEC identified synthetic visualisation of prototypes as the best suited digital tool for Robotiz3d. Using existing CAD data, the VEC embedded the virtual Robotiz3d robot at real-world scale, showing the device operating on roads using laser scanning technologies to identify cracks and damaged areas, before using an on-board 3D printer to inject resin to repair the fault.

The VEC's digital engineers developed a short video, which demonstrates a simulation of the robot travelling down a public street, showcasing how the robot's capabilities could enable companies and local councils to reduce time spent on repairing roads, only after serious damage has occurred.

### Impact

Robotiz3d have included this animated video as part of a recent Innovate UK application, which will enable the organisation to gain significant funding to further develop their concept and bring it to life.

