

# New AI tool set to improve efficiency of UK sewer system surveys

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The new technology—developed through a two-year Knowledge Transfer Partnership between the University of Exeter and South West Water—uses Artificial Intelligence to monitor and detect faults in

sewers with a high level of accuracy, making it easier, more reliable, and more cost-effective to maintain the wastewater network.

The UK's vast network of over 525,000 km of sewers are notoriously expensive to maintain. Currently, sewer pipes' conditions are inspected by time-consuming CCTV surveys, where trained technicians work to identify each pipe's faults and features.

The new technology makes it possible to automate this process, by combining expertise in computer vision and AI technologies with a wealth of archived CCTV footage. The AI tool can detect faults in sewer pipes with an impressive accuracy of 90%.

This technology will help South West Water to increase the reliability of its sewer network condition assessments.

Over the next four years, the company expects to reduce the resource required to annotate surveys and possible re-inspections, and improve health, safety and well-being by reducing the time staff spend in [hazardous conditions](#), as they fully integrate the tool within their working practices.

The company has since received support from a network of key industrial partners, including specialists in CCTV inspection and reporting, iTouch Systems, to develop this technology for future commercialization.

The KTP associate Dr. Josh Myrans has also been awarded a prestigious UKRI Future Leaders Fellowship to continue this line of research from within South West Water, working as a Data Scientist.

The company will use this UKRI and South West Water funding to drive forward the AI tool's capabilities to meet full UK standards and begin

the process of integration with hardware to explore the possibilities of autonomous sewer inspection devices.

Professor Zoran Kapelan, an Honorary Professor at University of Exeter who supervised the project, said: "The KTP is a great example of the possible achievements of close collaboration between industry and academia, developing a real-world tool with the potential to deliver significant impact in the water industry."

Oliver Raud, South West Water's Program Manager for the new Center for Resilience in Environment, Water and Waste (CREWW), said: "We are really excited to be continuing the development of this very promising solution. Investing in innovation, realized through our partnership with the University of Exeter, and wider supply chain, is essential as we enhance our capacity and capabilities to protect the environment and communities we serve."

Provided by University of Exeter

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