



## UtterBerry wireless sensors for civil infrastructure monitoring

### The technology

Developed by CSIC researcher Heba Bevan, UtterBerry comprises miniature, wireless, ultra-low power sensors combined with artificial intelligence, specifically designed for infrastructure monitoring.

UtterBerry is easily installed in unsafe or difficult-to-access sites to perform on-board calculations deriving acceleration, inclination and displacement in real-time without human intervention.

Sensors are self-calibrating and optimise their data communications within the sensor network according to conditions. They collect, process, interpret and analyse data, reporting it to users remotely on any internet-enabled device.

### Applications

UtterBerry has been installed at a closed shaft at Crossrail's Eleanor Street site in London. Contractors needed to monitor the area during excavation work and the UtterBerry system was installed in one day by one person.

The technology enabled surveyors to safely monitor the tunnel from their offices. Data was available immediately, including temperature and humidity readings that flagged up the presence of water in the shaft, helping to identify a broken pump.

### The benefits

- safety – wireless capability means no personnel are required to enter potentially unsafe environments after installation
- accuracy – high levels of accuracy and repeatability of acceleration, tilt and displacement data have been achieved
- low power – the smallest, lowest power consumption intelligent monitoring option on the market
- speed and ease of installation – lightweight and small size
- robustness – sensors strong enough to meet all conditions
- longevity – can be deployed for years without maintenance or battery changes

*"The UtterBerry system is an innovation that could become the standard for future monitoring across the construction industry. It is 100 per cent remote, uses almost no power, is very robust, highly accurate and was cheaper than both the traditional alternatives for its application at the Eleanor Street site. There's no doubt it could be used in many different applications."*

Nigel Marsh, Senior Surveyor for Costain

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