

Businesses combine know-how to create new sensing equipment

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Businesses Incremental and Sensonic have joined forces with Network Rail, winning funding to help develop a new rail sensing system.

The funding, from Innovate UK, has helped Incremental and Sensonic in the development of FORSE (Fibre Optic Railway Sensing Equipment). This system combines Incremental's AEGIS train identification movement and tracking solution with Sensonic's digital twin representation of vibrations along the railway track.

Network Rail has agreed to a 12-month trial of the technology between Allington Junction and Skegness on the East Midlands Poacher line.

This test will focus on detecting early signs of defective rail joints, something which is at present only detectable through manual inspection. While degradation of joints can be detected via Sensonic's solution, Incremental's AEGIS provides data to track and identify all trains on the network. As a result, a wide range of information is instantly obtainable by Network Rail and stakeholders via a bespoke remote dashboard.

Deep Desai, CCO at Sensonic is convinced that “the deployment of FORSE will dramatically reduce the need for speculative track inspections, increasing productivity by freeing maintenance staff to solve problems, rather than look for them, while improving lineside safety by removing boots from ballast.

“We’re excited about this new collaboration with Incremental and Network Rail to fast-track a game-changing solution focused on customer usability, efficiency and safety with our solution being part of this. With every train movement, the vibrations caused all along the infrastructure contains a plethora of insights.

“We are the leading company in the industry and our sole focus is on using our industry knowledge to augment the railway passenger experience; at Sensonic we have seen the power of our SonicTwin and continue to learn how the insights from the vibration digital twin can be used for upskilling staff and increasing the efficiency of the current track maintenance ecosystem.”

Daniel Lee-Burnsall, co-founder and chief executive officer of Incremental, said: “Every year around £2 billion and more than one million man-hours are spent walking the track to detect, locate and rectify faults. Fusing the train tracking and location data from AEGIS with data from Sensonic enables FORSE to monitor the condition of fixed points and track individual trains dynamically and accurately as they move around the network, acting as virtual track inspectors.”