

Development of Australian Automated Internet of Things Monitoring Sensor (AAIMS) – Kurloo

Lee Hellen, Jun Wang, Charles Wang, Yanming Feng and Ryan Keenan (Australia)

Key words: low-cost technology, IoT, GNSS, MaaS

SUMMARY

Designed and developed in collaboration with the Queensland University of Technology (QUT) as part of a 3.5-year manufacturing research project, Kurloo was funded by the Innovative Manufacturing Cooperative Research Centre (IMCRC) with total project value \$4.5 million. Invented and made in Australia, the Kurloo system combines the advantages of GNSS with power and cost effectivity of the Internet of Things (IoT). Kurloo's compact design is ideally suited to long-term monitoring of hard-to-reach places. With the uptake of this simpler GNSS-IoT solution, engineers have a new tool to collect long-term accurate daily data to support their qualitative predictions. By providing daily precise and accurate measurements, Kurloo can help customers and stakeholders improve productivity, increase return on investment (ROI), and manage risks around environments, buildings, and structure.

A general overview of the Kurloo system is presented, followed by an introduction of installation process and cloud-platform features. This comprehensive task can be discussed with respect to device components, software functions and business model – Monitoring as a Service (MaaS). To evaluate the proposed system performance, two experiments were carried out at a EDM calibration site and landslide-prone embankment area, which demonstrate that 3-millimetre positioning result is achievable, and the advantages of continuous monitoring outperform the traditional surveying method. The success of Kurloo research and commercialisation journal is an exemplar of how a small business with innovative ideas, passion and drive can partner with a leading university to transform its offering and create opportunities for Australia's manufacturing sector.

Development of Australian Automated Internet of Things Monitoring Sensor (AAIMS) – Kurloo (12311)
Lee Hellen, Jun Wang, Charles Wang, Yanming Feng and Ryan Keenan (Australia)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023