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Press Release

Techenomics' innovative magnetic plug work part of DeepIoT project

One of seven companies in CRC-P developing hybrid wireless IoT platform

Innovation incorporating the development of new technologies is one of the core principles at Techenomics as the company strives to give clients maximum benefit from fluid management and condition monitoring.

As well as developing technologies to enhance its service, Techenomics is committed to working with others to ensure improved productivity in mining, transport and any industrial applications where lubrication is vital to effective and efficient operations.



CHRISTOPHER HARRY ADSETT
CEO OF TECHENOMICS

An example is the company's participation in DeepIoT, an Australian Federal Government's Cooperative Research Centres Project (CRC-P) developing a new hybrid wireless IoT platform for underground mines.

This world-first Hybrid Wireless IoT Network will integrate four major wireless technologies into a single platform aimed at boosting the safety and productivity of underground mining operations. This could also benefit surface mining, future digital mining and other industrial applications.

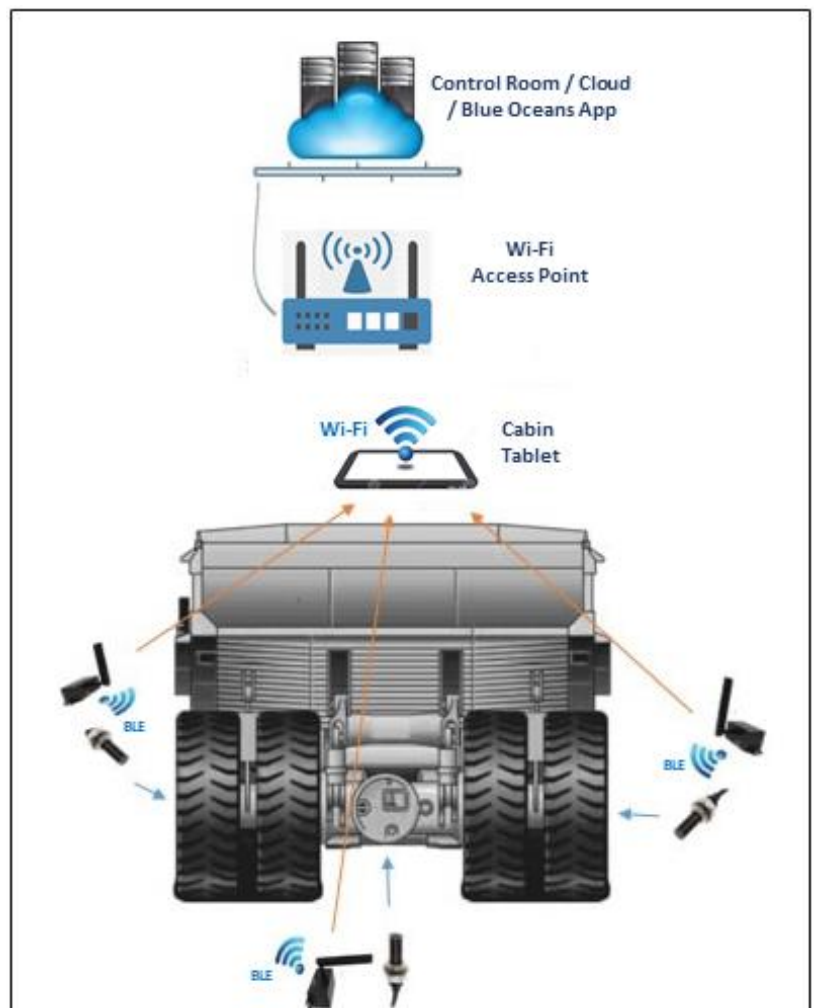
As one of seven companies participating in DeepIoT, Techenomics is developing a magnetic plug capable of providing real-time data for underground equipment which may also benefit surface mining.

The project is managed by Roobuck Pty Ltd and Techenomics thanks Roobuck for the invitation to participate. Other initial participants are University of NSW, Redwood Technology Pty Ltd, Cognitec Systems Pty Ltd, Newcrest Mining Limited and Henan Energy & Chemical Industry Group Xinjiang Investment & Holding.

There are five main closely-related project outcomes - DeepIoT platform, immediate DeepIoT applications, independent systems, cooperation and training.

The hybrid **DeepIoT platform** will integrate four wireless technologies - WiFi, UWB, BLE and RFID - into a single system, which covers high bandwidth and low bandwidth for different applications.

If the timeframe and budget allow, LoRa wireless technology may also be added into the scope.



Based on this platform, various legacy systems can be integrated into DeepIoT, such as hardwired industrial buses and wireless leaky feeders.

DeepIoT will be designed ready to connect any wireless devices including newly developed devices, upgraded current stationary devices such as cameras or standalone devices such as a portable gas detector, simply by adding DeepIoT wireless modules.

With **immediate DeepIoT applications**, the project will develop 12 terminal devices, including: Five tracking tags - flagship model of cordless caplamp; lightweight model of cordless caplamp; wrist tag; vehicle tag; and on-board-unit for Collision Warning System.

Seven application devices - messaging belt tag, message board, multi-function sign, traffic light; thermal camera; vehicle oil condition monitors; and general data transmitter.

All of these tags and devices will be designed as intrinsic safety suitable for underground coal mines and uranium mines and include at least one of four wireless technologies.

The planned devices will cover the following applications: person and asset tracking; fleet management; zone management; access control; emergency management; ventilation control; traffic management; two-way signalling; text message communications; equipment and environment monitoring; and equipment control.

As far as **independent systems** are concerned, some devices could be running without the DeepIoT platform to form a separated system product. Among the possible system products are Collision Warning System, traffic control system for tunnels, personal equipment kiosk plus electronic tag station and AI centre.

This project includes **cooperation** as it brings together METS, other manufacturers, a research organisation (UNSW) and miners to form a consortium. This consortium and DeepIoT platform will create opportunities to bring more companies in, especially small and medium enterprises (SME) in the METS sector.

Another outcome is **training** and three PhD students will be recruited at UNSW at the end of the project. They will complete most of their research work in collision avoidance based on UWB and BLE; AI platform for DeepIoT data analytics; and underground tracking and communication.



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Techenomics CEO Chris Adsett said: "Techenomics is making a contribution to this ground-breaking program with the capability to deliver improved mine truck efficiency and productivity through provision of real-time data. "We are committed to invest in the project to create a wireless real-time oil condition monitor sensor supported by the capability of our Blue Oceans software reporting system."

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