

Hitachi Invests in Lidar Sensor Company Baraja to Advance Autonomous Mining



Hitachi Construction Machinery has invested in Australian startup Baraja. This investment will enable Hitachi to use Baraja's Spectrum-Scan Lidar technology to accelerate the pace of development for improvements to the autonomous haulage system (AHS) for mining dump trucks and autonomous operation of ultra-large hydraulic excavators.

In recent years, the trend toward automated, autonomous and electrified mining machinery has accelerated, and there is a growing need for solutions that streamline and optimize not only mining machinery but also overall mining operations. Against this backdrop, [Hitachi Construction Machinery](#) has been strengthening its solutions for overall mining operations, including the development of AHS and 'ConSite Mine', which helps solve problems at mine sites. To further accelerate this trend, Hitachi Construction Machinery has decided to invest in [Baraja](#), a company that has created and builds [Spectrum-Scan](#) Lidar, a breakthrough technology essential for highly automated operations.

Through this investment, Hitachi Construction Machinery will be able to work closely with Baraja to accelerate the development of Spectrum-Scan Lidar products with mine site specifications and strengthen local support.

Measuring distances to objects in high resolution

Baraja's Spectrum-Scan Lidar uses a prism-like optical sensor head to measure distances to objects in all directions with high resolution, and is exceptionally durable because it has few moving parts in its mechanism. With active contracts in place in mines and a great deal of expertise in operating in mining environments, this technological expertise can be utilized in the development of automation and autonomous operation at Hitachi Construction Machinery.



Baraja's Spectrum-Scan Lidar system.

The Hitachi Construction Machinery Group has long been promoting the 'One Hitachi' initiative to bring together a wide range of Hitachi Group technologies, and 'Open Innovation' to create new value using technologies and services from outside the group, including the launch of the 'Venture Investment Promotion Project' in April 2020 to strengthen collaboration with startups.

Going forward, it will continue to provide '[Solution Linkage](#)' solutions that utilize ICT and IoT to customers in the mining industry around the world to help them achieve the higher levels of safety and productivity they seek. Furthermore, the group will accelerate its open innovation activities, including investments with startups that are necessary for its business strategy, such as the recent investment in Baraja.

Accelerated commercialization in terrain measurement and object detection

Hideshi Fukumoto, vice president, executive officer and CTO of Hitachi Construction Machinery, commented: "Spectrum-Scan Lidar is a must-have technology providing better autonomous sensing solutions for mining customers who demand increasingly higher safety and production efficiency. We are delighted to be working with Baraja, a company with leading-edge technology in this field. More than just an investment relationship, we expect that this relationship will lead to technological improvements and accelerated commercialization for both parties in areas such as terrain measurement and obstacle detection. Through this investment, Hitachi Construction Machinery will accelerate the improvement of autonomous haulage systems (AHS) and the practical application of remote and autonomous operation of ultra-large hydraulic excavators, as well as expand its application to the civil engineering and construction fields. We will also strengthen our open innovation initiatives in the digital field, such as this one."

Federico Collarte, CEO of Baraja, stated: "Legacy Lidar systems have been hampered by poor performance with limits on range,

resolution and field of view. Baraja's Spectrum-Scan Lidar technology delivers reliability that's proven in the field by partners such as Hitachi Construction Machinery – one of the world's most innovative machine manufacturers. Both this latest capital and our ongoing partnership with Hitachi Construction Machinery will help us advance our mission of helping make self-driving vehicles an everyday reality sooner.”



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