

Case Study: Bucket Sensing

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Industry

Coal Mining

Region

North America

Location

British Columbia Canada

Application

P&H 4100 electric rope shovel

Customer Profile

Truck and shovel open pit operations with 7 electric rope shovels



Situation

An accurate location of shovel bucket is currently missing in open pit operations to correlation the geo-spatial location with contextual and sensory data such as digability index, payload, ore sorting, coal seams location and orientation. The mine was interested to develop a solution can precisely determine the location of bucket and could be correlated with other on-board and cloud data.

Solution

RIGIDprecision™ platform from RIGID ROBOTICS provided scalable real-time data from shovel enabled by RIGIDsense™ hardware which was sent to the cloud and processed an onboard computer where advanced bucket sensing algorithms determined the accurate location of bucket on a real-time basis. The bucket position data were ingested by different pipelines for different applications like drill and blast optimization, and coal seam visualization.

Pilot Duration

3 months (October – January)

Availability

RIGIDprecision™ platform availability: 99.99% of shovel availability

Benefits:

- Increase compliance to mine plan
- Improve recovery while reducing dilution or ore loss
- Basis of geo-spatial data analysis for multiple applications: drill and blast optimization, 3D seam visualization, payload, ore sorting, mine plan compliance, etc.

Outcome:

- Bucket position with less than 20 cm accuracy
- Multiple pipelines to different applications such as GIS, Drill and Blast Optimization, Mine Planning and Scheduling Software