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RCT and Hexagon help to overcome Codelco's woes

Like many mine sites situated in geographically harsh and climate sensitive landscapes, Codelco's Andina site in Chile is faced with a myriad of challenges including: poor visibility; high altitudes (up to 4km above sea level); large cliff faces; steep drops; -25°C winter weather; slippery roads, icy surfaces; and annual blizzards (which frequently close the mine until it is safe for employees to return).

It was therefore not surprising that Codelco was recently confronted by the results of a risk assessment study which determined that either autonomous (or at the very least) teleremote controlled mining, had to be implemented. This assessment spurred RCT and Hexagon Mining to collaborate towards finding a customised solution to help Codelco achieve its operating requirements within a safe environment.

Senior project and control-master software engineers from RCT and Hexagon conducted extensive research to adapt and establish new technologies, which would suit Andina's mine site.

RCT's ATX2200 (teleremote controlled system) and Muirhead (speed limiter) were combined with Hexagon's Jmineops (geofencing functionality), SAFemine (CAS)

and TrackingRadar (object detection systems). These technologies were thoroughly integrated before being installed onto a wheeled bulldozer by RCT and Hexagon field engineers.

With the bulldozer operated from a safe location - in a stationary and insulated cabin located within the site - RCT customised the teleremote installation by utilising the site's existing resources, materials, and a new communications network.

A line-of-sight, portable remote unit was also included to operate the bulldozer in a line-of-sight situation (rather than from a stationary cabin). This provided flexibility for operating each machine, in multiple applications across the site, if the network coverage was interrupted.

For this pilot project, Codelco requested that the system solution be fitted to an older bulldozer, in this case a Komatsu WD600 wheeled unit. This additional challenge proved that RCT was able to adapt its solutions to any situation or machine.

The simplicity of using the teleremote system has been highly praised; the easy transition from actually physically driving the machine, to operating it from a safe cabin;

feeling safe at work, whilst not having to endure the frequently brutal Chilean weather conditions, has proved to be a priceless bonus for the operators.

“Our partnership with RCT was key to the delivery of this functionality for Codelco”, said Dave Goddard, Director of Business Development for Hexagon Mining Autonomous. “RCT brought a ‘can-do’ attitude to the project, and we never had anything less than full confidence in their ability to deliver.”

RCT’s core focus is to create adaptable, bespoke solutions, and where appropriate to work with partners such as Hexagon, on a project-by-project basis. The solution achieved was totally relevant and suitable to Codelco Andina’s mining requirements.

RCT is also able to provide on-site training programmes and will remain on-site for a time to ensure everything is 100% in order, thereby contributing to the successful completion of Stage 1.

Codelco has approved RCT to deliver Stage 2, which it aims to have installed and implemented in the near future.



The company’s intention is to continue working with RCT to implement the teleoperation for other production equipment, in order to achieve remote operating of the entire production operation. Visit www.rct.net.au

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