



EXPANDE – Mining Open Innovation Program by Fundación Chile

Challenge BHP-16-19:
“Optimize parapet installation
(barrier) in primary crusher”

June, 2019

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This project is managed by the Supply Innovation area of BHP Billiton, associated with the Alta Ley Program, and supported by the Mining Open Innovation Program (EXPANDE) by Fundación Chile (FCh).

The common purpose is to promote innovation and make possible a better future for global mining, strengthening the mining ecosystem in Chile, together with constituting a collaborative model that enables the best solutions for the high complexity challenges of today and tomorrow’s mining.

General Description

- **General Framework**

In Minera Escondida, unscheduled events occur, where it is required to access the feed hopper of the primary crushers to perform maintenance tasks: in equipment, removal of large elements or other activities.

For the protection of people, parapets (barriers) are installed to prevent the entry of mining trucks into the area where the ore is fed to the primary crusher.

The challenge is to develop and implement an optimized system to ensure the work area, which reduces installation time and removal of barriers in 10 minutes or less.

General Description

▪ Aim and scope

Identify or develop technological solutions that allow blocking the access of mining trucks to the area of mineral feed to primary crushing equipment required during unscheduled maintenance and operation events, decreasing installation time and removal.

- The proposed access blocking system should preferably be of the physical barrier type, however, other types of technological solutions will be considered.
- The solution should ensure savings in installation and removal time. Currently this activity requires approximately one hour. It seeks to reduce this time to 10 minutes or less.
- The system must ensure a risk-free operation for people and facilities and easy maintenance and operation.
- The application of this solution is oriented to the primary crushers 2, 3, 4 and 5 of Minera Escondida.
- They are considered large mining trucks, typically used in mining operations exploited in the open air with a load capacity of over 300 metric tons.

General Description

- **Current situation**

The unscheduled activities of maintenance and operation that require the access of people to the area of the feed hopper of primary crushers, makes it necessary to install parapets (barrier) that prevent the access of mining trucks to the positioning zone for unloading the ore, with the purpose of ensuring the physical integrity of people.

The installation and removal of the parapets (barriers) requires a total time of approximately one hour, during which it is not possible to perform maintenance or production, impacting the availability and use of the crushing plant.

- **Proven technologies**

Parapets (barriers) of material like rocks.

- **Available information**

For this challenge, plans and photos of the work areas will be available.

Experience and Administrative Information

The following information is requested for the present prequalification stage:

- General:
 - Experience and current services, similar services in mining, in operation or under development.
 - Capabilities for development and integration.
 - Capabilities to provide operational and maintenance services.
 - Capabilities to operate in Chile, by itself or through technical / commercial representatives. (International Vendors)

- Provide supporting documentation.
 - Free format (pptx, pdf, image) presentation, brochure, others.

Challenge's stages



Please send your backups before July 12, 2019.

1. Scouting

- If you are interested, attach supporting documentation.(Experience and Administrative Information) to: innovacion.abierta@fch.cl

2. Prequalification and Save the Date

- Expande will send an email to communicate the prequalification state .
- If you are prequalified, Expande will send documentation. (RFP, Bidding guideline, General guideline)
- Also, to participate in the challenge launch, you should send the acceptance letter.