

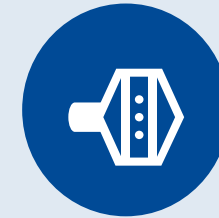
# Grinding Optimization CASE STUDY

## THE CHALLENGE

- Due to the lack of knowledge on incoming mill feeds, operators struggles to determine optimum control parameters leading to decreased mill throughput because of
  - frequent mill overloads and consequent frequent mill stoppages
  - Inability to run mill at designed capacity

## THE SOLUTION

- The implementation of the grinding app solved the underlying cause for the challenges – the lack of insight into ball charges and liner wear – because it gives knowledge of incoming mill feeds
- The app enables operations to schedule and predict maintenance for ball charges and liner material
- The mill prediction of 20 minutes into the future allow for optimum settings of mill control, preventing overload events
- Recommendation of optimum mill control variables, stabilizes feed and maximizes throughput



## THE RESULTS

- Increased throughput leading to a reduction of energy consumption Overload events reduced by leading to optimized throughput
- Reduced downtime by through prediction of liner wear and ball charge maintenance



Higher Recovery



Cost Savings



Emission Reduction



Lower Energy Consumption



Lower Chemical Usage

**BASF Intelligent Mine helped a large gold mine in Kazakhstan to increase throughput by 1% with reduced energy consumption**

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\* Assumptions for energy savings: energy consumption for SW RO desalination plant is 4.4 kWh/m<sup>3</sup> of water produced; energy savings due to less pumping of water is calculated with  $U_{pot} = \text{mass of water} \times g \times \text{Height}$ ; the assumed efficiency of the pumps is 80%