HEXAGON

Brochure

How to Use Split-Online Data at the Mine/Crushing Plant/Mill

Split-Online System Installation Locations

Shovels, Excavators, Haul Trucks, Apron Feeder, Primary Crusher, Secondary, Tertiary, SAG/AG/Rod Mill Feed, Pebble Crusher, Screen Decks


SPLIT

Split-ShovelCam

ShovelCam® provides an online measurement of the post-blast muck pile particle size distribution (PSD) information with shovel location.

Drill and Blast Design

- Rock fragmentation from different blast designs can be evaluated to determine the most effective parameters for oversize reduction and crusher throughput
- The Split-Online system can be used to monitor ongoing rock product delivery to ensure proper sizing requirements are met
- Proper blast design can lead to reduced energy consumption with improved throughput

Equipment Utilization

- Shovel dig rates and crusher performance can be compared to rock size. Also, equipment wear can be estimated based on rock properties
- Real-time particle data can enable operators to take preemptive action to avoid oversize product delivery that leads to equipment failure

Run of Mine

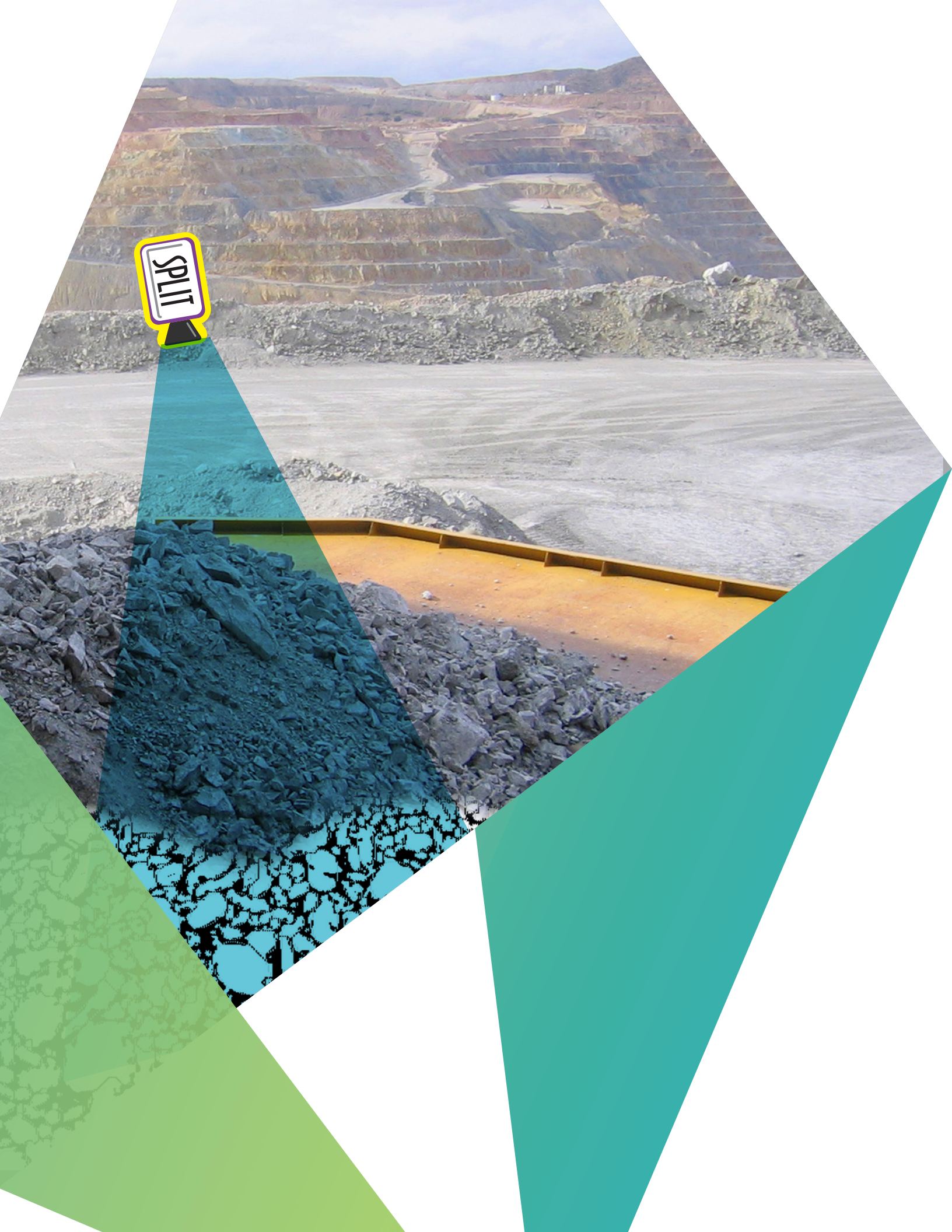
- Operations can use the Split-ShovelCam system for leach operations
- The muck pile face is typically the best and only feasible place to measure the blast fragmentation before it hits the leach pad

Primary Crusher Feed

- Use the Split-Online system with the ShovelCam, TruckCam or Apron Feeder configurations
- Optimize blasting: Measurement of primary crusher feed provides feedback to the blast plan if truck is tied to the bench location
- Relate ore type variation feeding the comminution circuit to help forecast crusher throughput
- Fragmentation profile: Size at the muck pile influences dig rates, shovel maintenance and overall production in numerous ways

Key Benefits

Immediate feedback to the mine on blast performance, feed forward to the plant on what is coming from the mine, correlation of PSD to shovel maintenance and enhanced process control decisions. Get on the path to understanding what is happening at the muck pile.


SPLIT

Split-TruckCam

TruckCam™ provides an automated measurement of the post-blast muck pile or stockpile particle size distribution (PSD) information of trucks dumping into a primary crusher or other location.

Drill and Blast Design

- Rock fragmentation from different blast designs can be evaluated to determine the most effective parameters for oversize reduction and crusher throughput
- The Split-Online system can be used to monitor ongoing rock product delivery, ensuring proper sizing requirements are met
- Proper blast design can lead to reduced energy consumption with improved throughput

Equipment Utilization

- Shovel dig rates and crusher performance can be compared to rock size. Also, equipment wear can be estimated based on rock properties
- Real-time particle data can enable operators to take preemptive action to avoid oversize product delivery that leads to equipment failure

Run of Mine

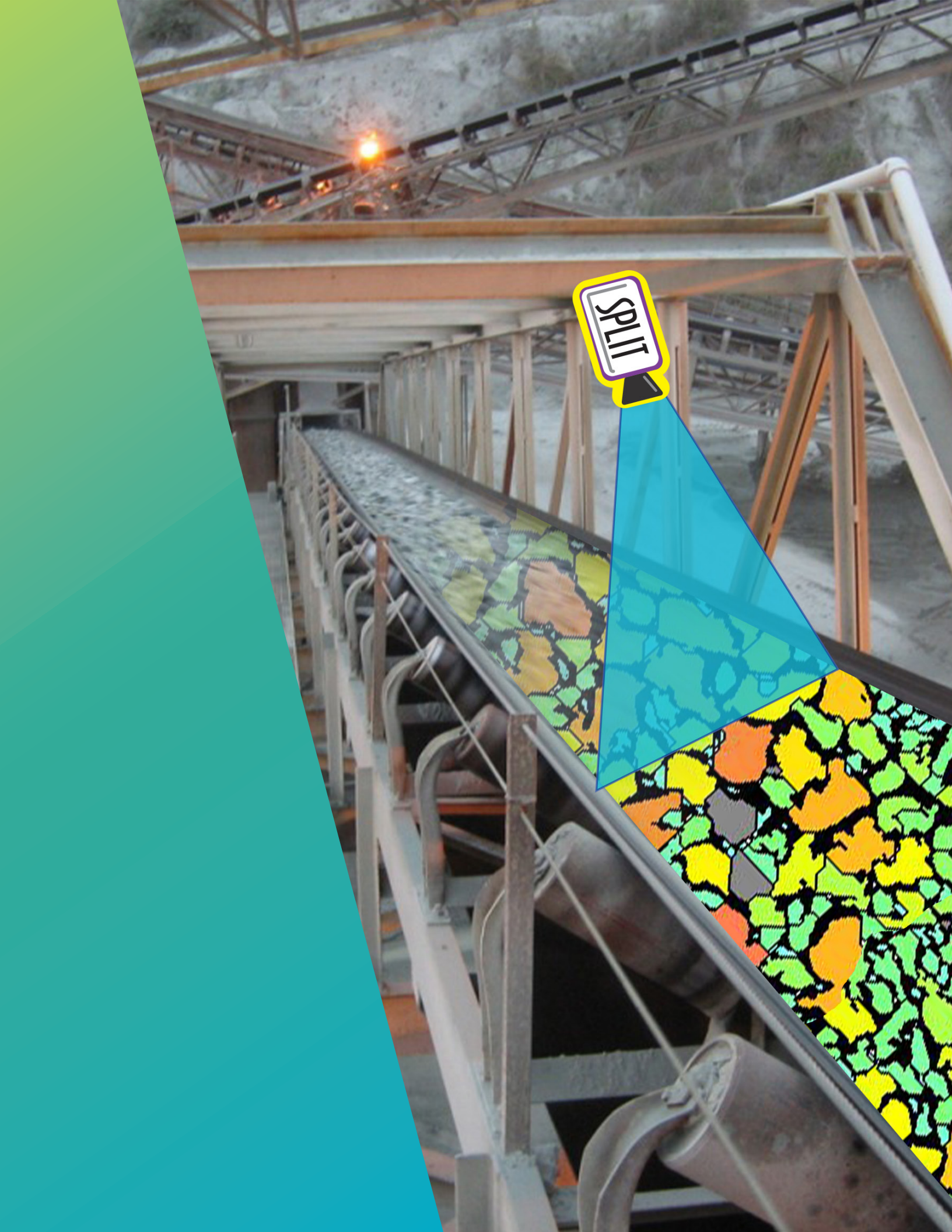
- Operations can use the Split-TruckCam system for feed to the comminution circuit
- Optimize blasting: Measurement of primary crusher feed provides feedback to the blast plan if truck is tied to the bench location

Primary Crusher Feed

- Use the Split-Online system with the TruckCam to provide the feed size distribution and correlate that to the reduction ratio of the primary crusher discharge
- Relate ore type variation feeding the comminution circuit to help forecast crusher throughput
- Fragmentation profile: Size at the muck pile influences dig rates, shovel maintenance and overall production in numerous ways

Key Benefits

Immediate feedback to the mine on blast performance, feed forward to the plant on what is coming from the mine, correlation of PSD to truck maintenance and enhanced process control decisions. Get on the path to understanding what is happening at the muck pile.


SPLIT

Split-ConveyorCam

ConveyorCam system for Primary Crusher, Secondary, Tertiary, Pebble Crusher and Screen Decks provides an online measurement of the particle size distribution (PSD) information for any conveyor belt location.

The mining comminution processes are all about efficient particle size reduction. The traditional crushing circuit uses multiple stages of crushers and screen decks to achieve the desired PSD to either feed to a milling stage or as a final product to the heap leach stage. In both cases, the crushing process efficiency is dictated by the ore hardness and particle size distribution.

Typical crushers used in the mining environment include Jaw, Gyratory and Cone crushers. Each have wear plates with a specific opening set point (sizing gap) that allow the material to feed the crusher, but the crusher opening set-point crushes the material to a desired discharge PSD.

Primary, Tertiary, Secondary, and Pebble Crushers

- Utilize the Split-Online system as a key performance indicator (KPI) control point to ensure the operation is crushing to the designed specifications
- More than just crusher throughput, operations can scrutinze crusher throughput and the quality of fragmentation in terms of a KPI or PSD
- Better understanding of the PSD and fines generated from the blast performance
- In a Gyratory and Cone crusher you can monitor the power draw (kWh) relative to the PSD feed/product of the crusher to indicate ore hardness such as Bond's {Wi} Work Index (kWh/t)
- Proactively identify maintenance of the crusher by monitoring the wear of the crushers through measuring the size produced relative to the closed side setting (CSS) and crusher position
- Feed forward to the plant on what is coming from the crushers
- Alarms can be configured in the SCADA, HMI or process control to warn operators of unusually high readings
- Coarser PSD can be a result of change in the crusher gap closed side setting (CSS), ore type change, or screen deck breaks. Using this information, operations adjustments can be made

Split-ConveyorCam

Increase Crusher Throughput

- ConveyorCam provides information for control of crusher settings. An operator can manually make adjustments to crusher settings based on crusher product readings or information can be fed into control strategy for use in autocontrol of crushers

- Operations can look at points in the process where it has physical control over the size being produced, so that a process control change can be made

Screen Decks

- The ConveyorCam system can provide immediate feedback to operations of a potential break in the screen or screening panel. Especially on secondary/tertiary crusher circuits where there are screen decks separating the coarse and fines

- By identifying these failures, the operation ensures it keeps its throughput targets. Trying to crush oversized particles reduces throughput and increases costs

Key Benefits

Immediate feedback to the first, second or third stage in the mechanical comminution circuit.

About Hexagon

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Our technologies are shaping production and people-related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Hexagon's Mining division solves surface and underground mine challenges with proven technologies for planning, operations and safety.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 22,000 employees in 50 countries and net sales of approximately 5.1bn USD. Learn more at hexagon.com and follow us @HexagonAB.

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