

# Metso

## VTM PSI<sup>®</sup>300 particle size analyzer and drive upgrade



The better control you have over your grinding particle size, the better control you have over your mineral recovery. This requires accurate monitoring and control. PSI inline with VFD can help with that.

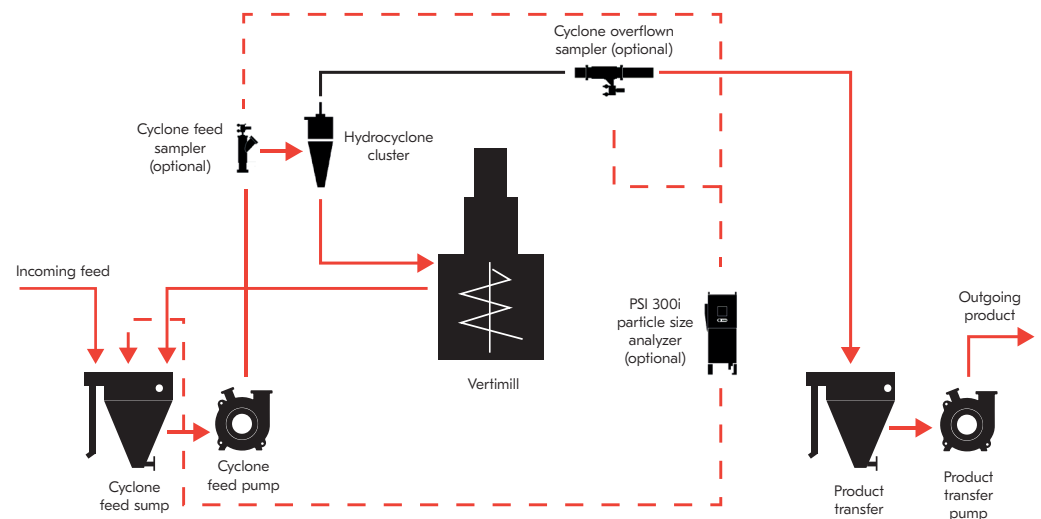
### Optimum grind challenge

All beneficiation plants have an optimum particle size for best recovery. Recovery and grade are interrelated and determine the amount of concentrate produced. The best way to affect flotation recovery is to fix the problems in grinding.

Grinding needs to be controlled in such a way that it provides correct particle size for optimal mineral liberation and highest metal recovery. The main challenge is reaching that optimum grind. Unfortunately, most plants suffer from either under grinding or worse - over grinding, and both lead to revenue loss.

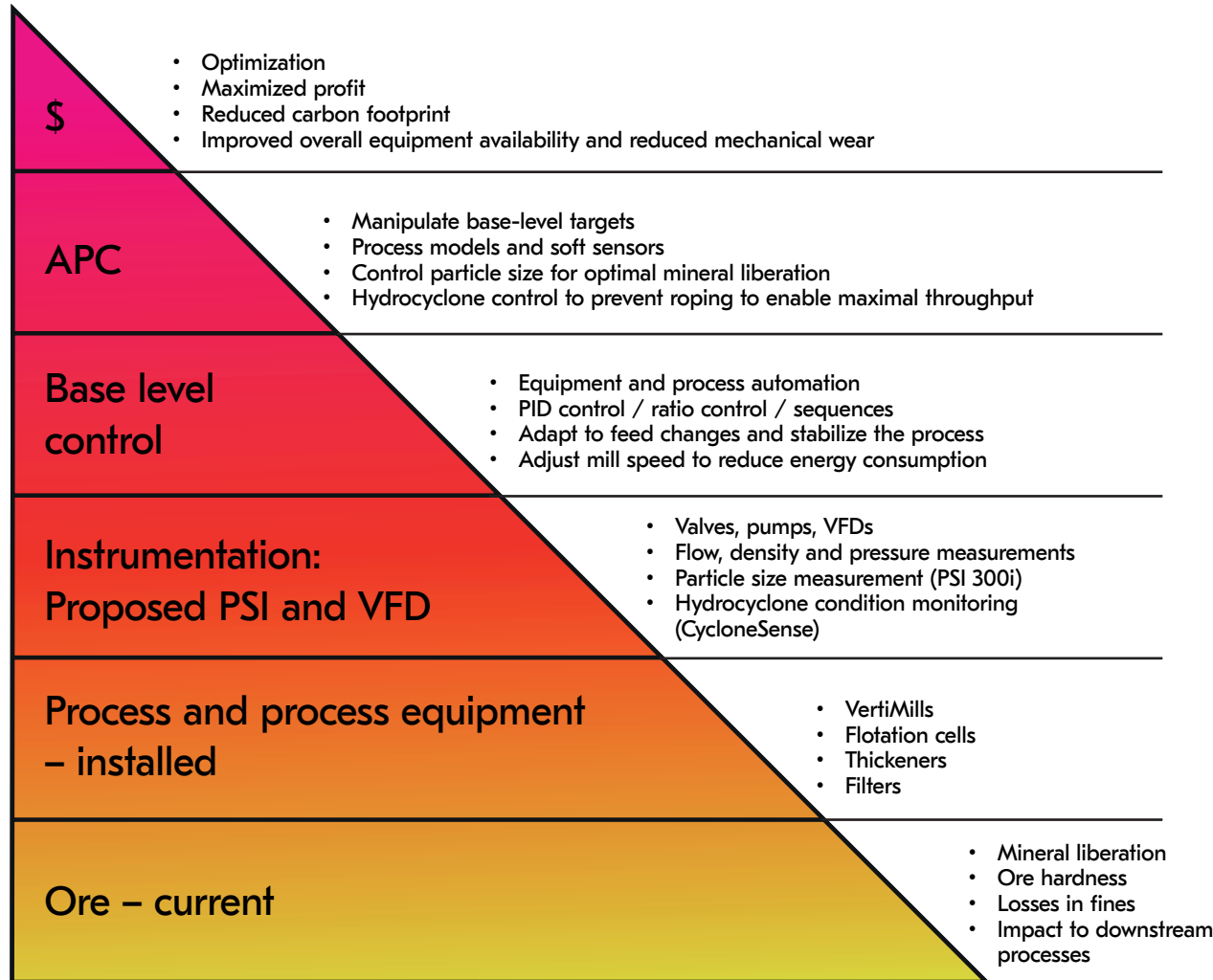
### Metso solution

By using a PSI inline with a VFD to control the Vertimill grind, our customers can optimize recovery grade. PSI prevents mill overfilling and reduces need for feed interruptions by calculating how to control all available variables so that predicted error is minimized by continuously adjusting all available setpoints and recalculating controls.



# The Metso solution

## What is process control?



### Adding PSI 300i provides:

- Information about particle size in hydrocyclone overflow
- Optimal mineral liberation in flotation for increased recovery
- Grinding media attention and mill speed adjustment

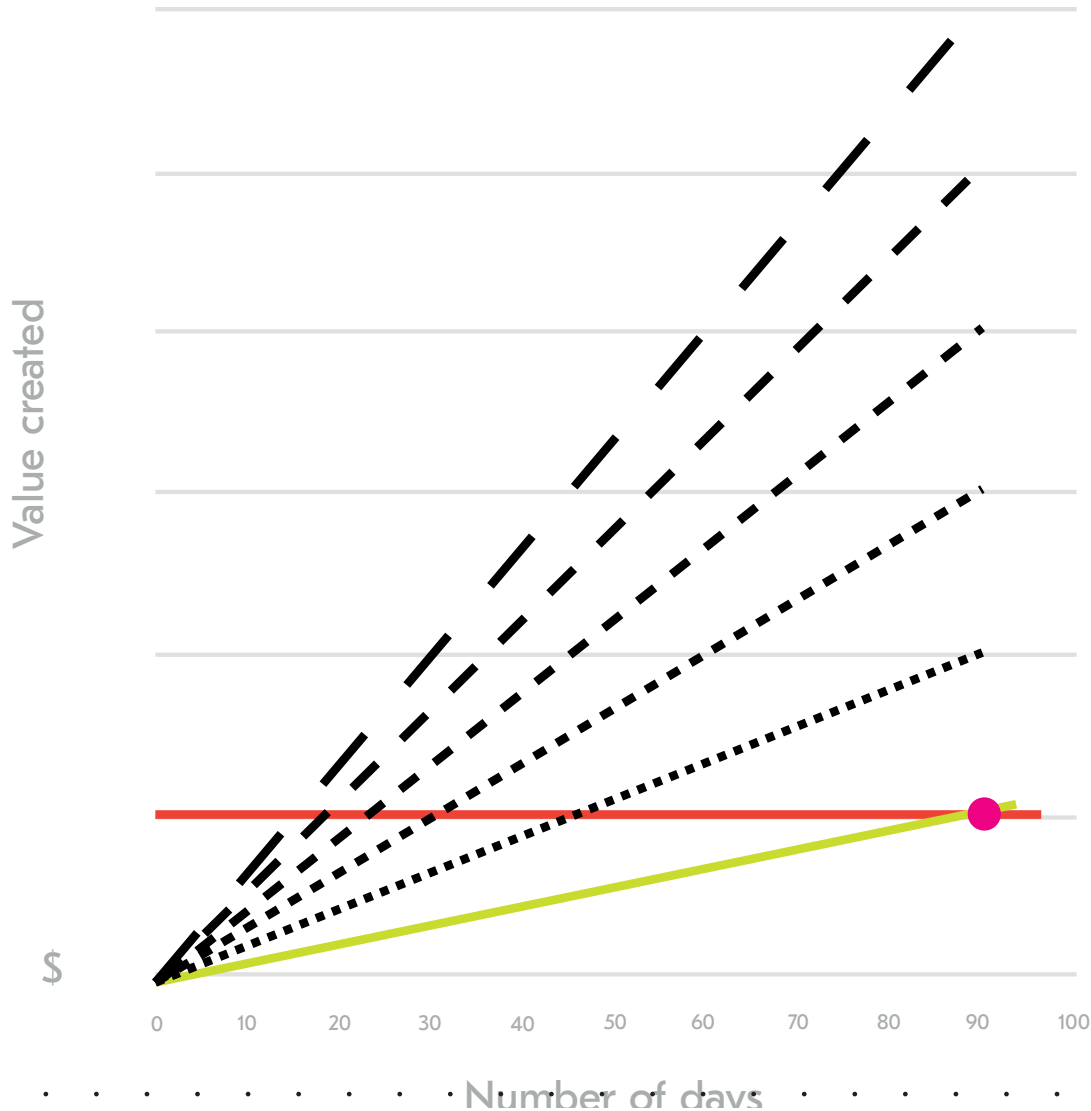
### Adding VFD provides:

- A means to change mill operation speed
- Optimized energy consumption at the start of the mill
- Reduced mechanical stresses during mill motor start up
- A means to change power draw and feed slurry density
- The cost for a WRIM+LRS is similar to a SCIM+VFD combination even for the larger VTMs

### Adding CycloneSense provides:

- Visibility inside the hydrocyclone to prevent roping before it occurs
- Control the hydrocyclone feed pressure, density and the number of operating cyclones
- Increased uptime and maximized throughput

# Customer value and ROI



Increased levels of automation will lead to improved recovery and decreased costs. It provides accurate flexibility because there is 100% more PSD testing per day. The return on investment is extremely quick, it can occur in a matter of weeks. Lastly, there is also the potential for remote monitoring as well as reduced energy consumption.

