

SONARtrac® Phase Fraction Management - Multi-Measurement Flow Technology

CiDRA's VF/GVF system with Phase Fraction Management (PFM), utilizes patented passive sonar, non-contact technology which provides dual measurement capability of flow and air content (gas void fraction-GVF) in slurries and liquids. This unique combination finally enables true phase fraction management leading to unprecedented improvements in process efficiencies and operations. Whether used to correct total volumetric flow in bubbly flows, correcting measurement error in density meters for a more representative mass balance based on solids mass fraction or helping to detect the cause of process upsets, Phase Fraction Management (PFM) delivers both top and bottom line value to thousands of customers around the world.



The SONARtrac VF/GVF dual measurement system provides an accurate, reliable, volumetric flow measurement, necessary for the accurate control of the mill's circulating load and mass balance equations.

- ◆ If entrained air enters into the hydrocyclone feed, then the total volumetric flow will be overstated by the volume of air in the line.
- ◆ The SONARtrac VF/GVF system provides a second real-time measurement of entrained air, expressed as a percent of the total slurry volumetric flow (VF).
- ◆ Operators use the measured GVF percentage to adjust the volumetric flow to a "true" volumetric rate.

The SONARtrac entrained air measurement is also used by operators to correct the error in density measurement caused by entrained air when present in the line. An accurate density measurement is necessary for a representative mass balance based on the solids mass fraction.



SONARtrac PFM technology together with CYCLONetrac™ PST takes mill grinding efficiency to even higher levels

Combining the power of SONARtrac VF/GVF with PFM and CiDRA's CYCLONetrac Particle Size Tracking System (PST), which provides real-time particle size measurement of each cyclone, there is finally an integration of technologies that truly enables the transformation of data, to knowledge, to action, thereby providing the ability to optimize recovery, throughput and net metal production. When sump levels are low, air can be introduced into the hydrocyclone line. This condition can be detrimental to cyclone performance. If entrained air in a hydrocyclone feed is not detected, it can cause coarse particles to carry over to the overflow. In addition, if air is present in the feed slurry, the liner wear will increase and cyclone performance can deteriorate.

