CAPABILITY STATEMENT
ONLINE MONITORING SYSTEM

PRODUCT BROCHURE

The online condition monitoring and reporting system is used for automated detection and reporting of faults in low-speed gearless and gear drives such as SAG (semi-autogenous grinding) mills and HPGR (high pressure grinding rolls) drives. It combines traditional condition monitoring reporting with a continuous, automated online monitoring system that provides timely alerts and fault analysis. The reporting system is highly customisable, including options for both cloud-based and localised remote monitoring systems.

TAILORED SOLUTION

Instead of using generic alarm limits, historical fault characteristics for the specific piece of equipment are analysed and alarms are then adapted to the equipment and type of fault. Tailoring the system to the equipment allows for early identification of a fault and its source.

CHALLENGES

Verico uses a variety of sensors to record data for low-speed machines in extremely noisy and harsh environments.

The system's proprietary algorithms filter and process the high quality data captured from the sensors to detect low-level signals associated with the faults.

OUTCOME

The online monitoring system provides a timely alert for the cause and location of a fault in a piece of equipment. This prevents unexpected outages and substantially assists in maximising component life, while reducing maintenance planning, time and costs.

ONLINE SYSTEM

- Trending, warnings and alarms for critical faults specific to machine
- Simple visualisation software available on any internet enabled device
- No ongoing licence fees (for example, SCADA, ACMA or other proprietary platforms)
- Cloud based or localised data system
- Option for experienced analyst to analyse data
- Option for online condition monitoring reports at regular intervals
- Integration with existing site control system
- SMS/email message alert system for critical alarms.

SIGNAL PROCESSING AND FAULT DIAGNOSIS

- Energy band alarms for variable operating states
- Time synchronous averaging
- Envelope reference alarms based on various load/ speed ranges
- Synchronous vs non-synchronous trends
- Faulty sensor logic – ski slopes, incorrect bias voltage etc
- Autocorrelation
- Kurtosis trend
- Harmonic energy bands
- Relative phase
- Time frequency analysis
- Cepstrum analysis.

HARDWARE

- Customisable, expandable diagnostic system hardware
- Up to 24 channels of synchronised data from sensors plus an option for expansion of channels
- System hardware including a ruggedised transmission module using any of 3G, 4G, LTE, WiFi, Bluetooth, LPWAN and satellite communications infrastructure
- Stainless steel equipment cabinet and other associated support hardware.

CUSTOMISATION

The system is able to be customised to include (but not be limited to) the following sensors:

- Accelerometers
- Tachometers
- Oil analysis sensors
- Temperature sensors
- Acoustic emission microphones
- Cameras.

COMMISSIONING, TRAINING AND ONGOING SUPPORT

The following services are provided during set up of the system and throughout its operation:

- Full set up, installation and commissioning
- Training in CM techniques and online system usage
- Ongoing support for the online system and hardware.