Santasalo

David Brown Santasalo

- Cement
- Chemicals
- Defence
- Fibre, paper & tissue
- Food & beverage
- Marine & port operations
- Metals
- Mining & minerals
- Oil & gas
- Panelboard
- Power generation
- Rail
- Rubber
- Sugar
- Water & wastewater

GearWatch Condition Monitoring

Proactive and customisable remote monitoring services for industrial gears

Our GearWatch condition monitoring system is a smart, compact and value-adding tool for predictive remote process equipment monitoring.

GearWatch measures, records and analyses data, reporting changes in measured parameters in real time, 24/7 via the internet.

Oil particle content monitoring enables early detection of potential gear unit failures months, or even a year in advance. This allows you to plan maintenance activities around your operational requirements.

DBS GearWatch Standard

Earliest detection of the gear unit wear process with oil particle counting. Most compact and cost efficient condition monitoring method available for gear units. Very simple measurement results to analyse.

DBS GearWatch Oil Monitoring

With oil analysing unit:

- Earliest detection of the gear unit wear process with oil particle counting
- Oil quality measurements including:
  Humidity
  Di-electricity
  Conductivity
  Temperature

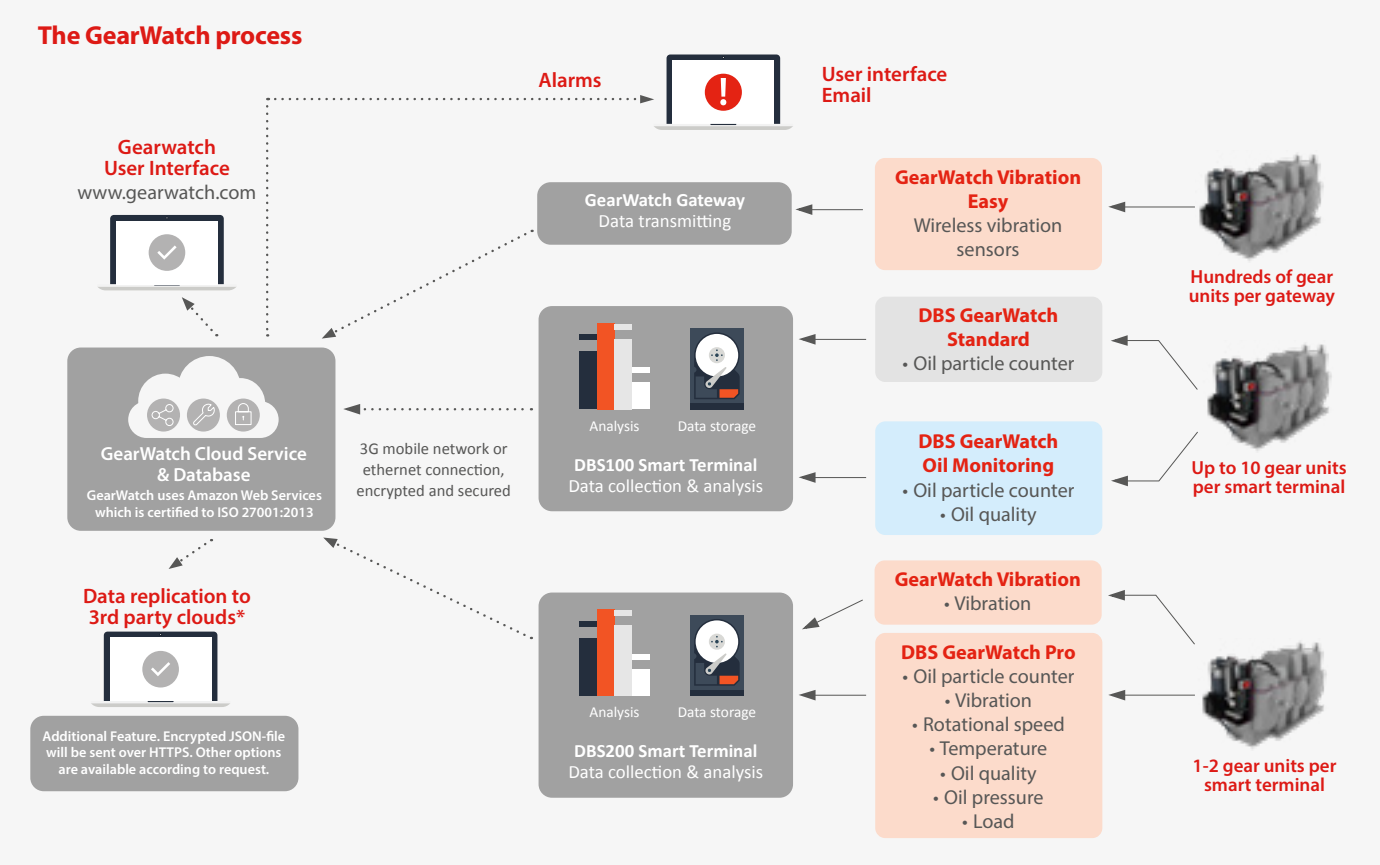
DBS GearWatch Pro

Tailored monitoring system for gear unit and drive train with selected parameters:

- Oil particle counter
- Vibration
- Rotational speed
- Temperature
- Oil quality
- Oil pressure
- Load

How GearWatch works

GearWatch can be tailored to your operating parameters and all data is monitored by gearbox experts at our control centre. Not only does it measure changes within the gearbox, it can also monitor a full range of equipment including motors, hydraulic systems and bearings, as required.



Oil particle counting

- The oil particle counter continuously monitors the condition of the gear unit and provides clear information on the wear process and any early stage damage in the gear wheels and bearings
- Online oil particle counters are placed on the pump-filter-unit of the gear
- An inductive sensor detects both ferromagnetic and non-ferromagnetic particles and is immune to air bubbles and other dust in the oil
- Minimum particle detection size starts from 70µm, with ferromagnetic particles and counted particles classified according to their size
- The oil particle counter can be installed separately or as an enclosed oil analysing unit with oil quality sensor

Adding value to your process

Real time information transmission allows quick recognition of problems, enabling fast corrective action before downtime occurs. The system is constantly observing process parameters and equipment operation online.

Key features

Proactive approach to operation and maintenance

- Increases production and running time of drive train components by reducing risk of unplanned shutdown
- Operation and maintenance cost savings
- Optimised spare parts stock

Early detection of potential gear failures with simple and cost efficient measurements

- Oil particle content measurements make it possible to detect failures months or even a year before
- Corrective actions can be planned in advance
- Defects detected also on slow rotating component(s)

Analysis completed by gearbox and drive train experts

- All condition monitoring engineers are ISO 18436.2 certified vibration analysts (Level II - IV)
- Clear recommendations and estimation of running time before service is required
- Quick return on investment

Oil quality sensor

- Monitors oil condition online like oil aging or mixing with other fluids
- Oil aging monitoring helps to perform oil changes according to actual need, not periodically

Cost efficient and easy installations

- No need for factory specific server
- Ethernet or 3G/4G connection to the secured and highly available cloud server

Web based user-friendly application for analysis

- Access to data from everywhere where there is an internet connection

GearWatch can support any industrial application in process critical industries, globally.

Mining & Minerals

Fibre, Paper and Tissue

Cement

Sugar & Food Processing

Metals

Rubber Processing

Hydro

Cranes & Ports

Case Study*
Minerals processing

Gearbox condition monitoring delivers maximum availability and value to a key customer in the minerals processing industry

Unexpected downtime can be costly in the minerals processing industry and when a large minerals manufacturer asked what we could do to minimise the risk of unplanned downtime we suggested proactive condition monitoring.

First installed in the manufacturer's plant in 2012, there are now 6 gear units in grinding process applications which are monitored by oil particle counters. In addition, the system operates additional sensors to monitor vibration in the gearbox, motors and mill bearings as well as sensors for rpm, oil pressure and oil quality.

How did proactive condition monitoring add value?

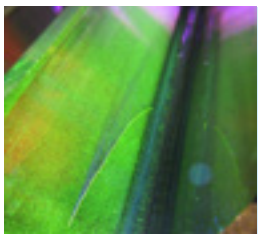
When the oil particle sensor detected higher than average levels the condition monitoring system sent an automatic alarm via email and SMS to David Brown Santasalo's condition monitoring team.

The team reviewed the data immediately and a report was sent to the customer to advise that oil particle levels were high, and a diagnostic inspection was advisable.

On site inspections found early stage bearing failure on the low speed shaft thrust bearing, as well as cracks on two of the teeth of the low speed shaft gear wheel. A gearbox repair was completed during a low production period, the following quarter.

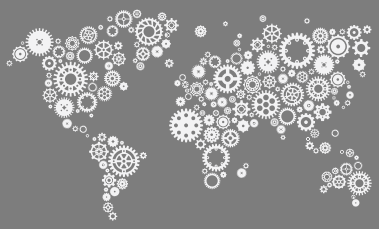
By identifying issues in the early stages, our customer avoided the costs of unplanned downtime and was able to schedule equipment repairs around the needs of the business and their customers.

Crack inspection of the low-speed shaft gear wheel teeth



Initial cracks on two teeth detected from particle measurements, six months prior to required overhaul

*Case Study based on earlier version of GearWatch system which included similar measuring technologies.



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