



# Operator Driven Reliability

Enabling a more profitable link between operations and maintenance



The Power of Knowledge Engineering

A better bottom line?



# Start with your front line.

Because of their proximity to equipment, operators are usually the first to detect even the slightest changes in process conditions and machinery health, including abnormal readings, odd noises, excessive heat and vibration, leaks or pressure, and more.

Too often, their observations go unreported or are not effectively acted upon, eventually leading to machine failures, unplanned downtime and higher operating costs. An Operator Driven Reliability (ODR) programme from SKF can help.

By enabling front line operators to take a more proactive role in communicating findings and initiating timely corrective actions for degrading equipment, an ODR programme from SKF helps operations teams become an integral part of your overall reliability-based asset management strategy.

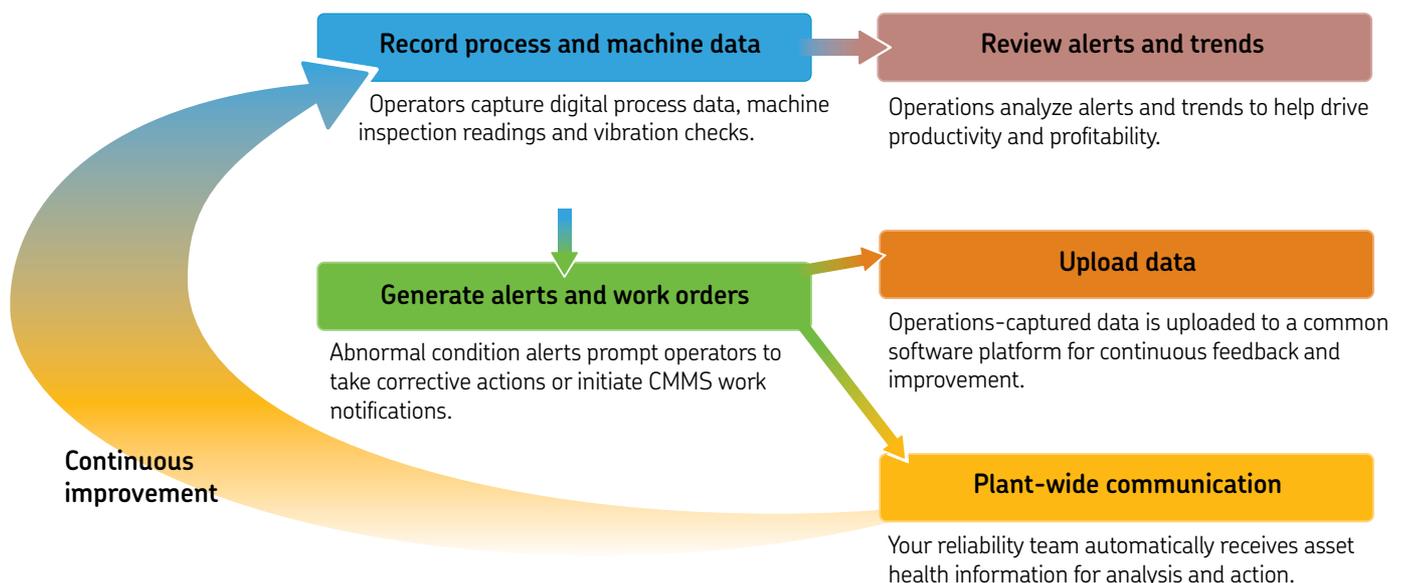
While reducing unplanned downtime and increasing plant productivity and safety, SKF ODR also encourages operations and maintenance departments to communicate more effectively and work together to achieve your business goals.

SKF ODR combines our proven ODR process with SKF software, sensors and hardware for a comprehensive, single-source ODR solution. Across one facility or several, SKF ODR offers a range of benefits, including:

- **Increased productivity and profitability**
- **Reduced maintenance and repair costs**
- **Reduced unplanned downtime**
- **Improved asset availability**
- **Reduced energy and operating costs**
- **Continuous improvement capabilities**
- **Root Cause Failure Analysis support**
- **Improved health, safety and environmental compliance**

## Operator Driven Reliability with SKF

SKF can help you tailor an ODR programme that empowers your operators and enables sustainable, continuous improvements.





# Operator Driven Reliability at work

Tools and technologies from SKF to empower operators and drive reliability

## Doing more with the same workforce

As part of their day-to-day activities, operators perform tasks that include process parameter inspections, minor adjustments and general observations of machine performance. Enabled by our ODR process, software and wireless technologies, operators can accurately and consistently record, trend, store, communicate and act upon process and inspection data, either with optional SKF handheld hardware, or virtually any Windows Mobile handheld computing device.



### SKF Microlog Inspector

#### Automates inspection

At the heart of our ODR programme is SKF Microlog Inspector – an advanced inspection system that integrates condition monitoring, workflow management, safety and regulatory inspections, and more in one easy-to-use system. SKF Microlog Inspector automates paperless inspection routines, replacing and enhancing your existing operations' data logging process. User-friendly input screens facilitate accurate data recording, while alarm indicators bring awareness to abnormal conditions.

#### Prompts correction

When abnormal conditions are observed and recorded, Microlog Inspector prompts operators to undertake predetermined corrective actions. When operators perform simple preventive and predictive maintenance checks and adjustments, production levels increase, while skilled maintenance personnel have more time to troubleshoot complex asset problems.

#### Links operations and maintenance

Operator work notifications are key to improving communications between Operations and Maintenance departments. Linked to your SAP® or other CMMS, the Microlog Inspector Work Notification feature automatically communicates operator requests for follow-up maintenance response to degrading asset conditions. Operator work notifications go to the SKF @ptitude Monitoring Suite for review and approval before processing to the CMMS.



### SKF @ptitude Monitoring Suite

#### Facilitates analysis and action

Serving as a common platform for your operations and maintenance information, SKF @ptitude Monitoring Suite further links operations and maintenance teams while facilitating process data analysis. Using data captured with Microlog Inspector, @ptitude Monitoring Suite trend plots to identify small process changes not yet in alarm, but possibly heading toward a problem situation.

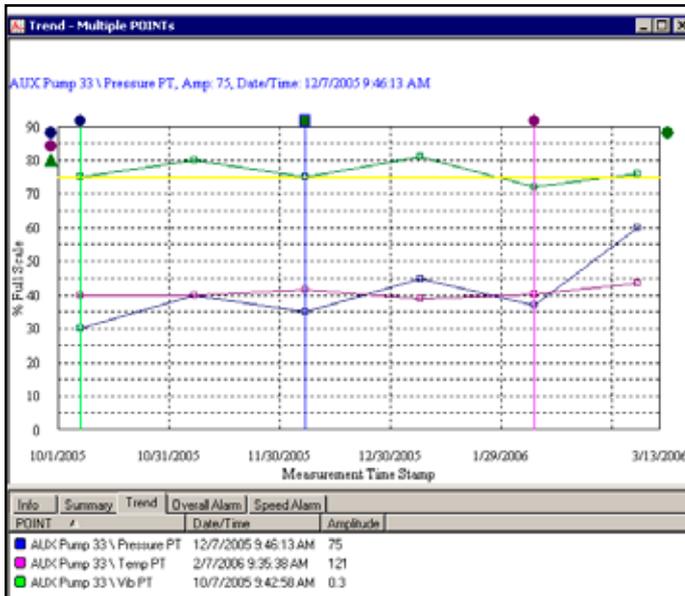
Operations managers then utilize SKF @ptitude Monitoring Suite alerts to focus on abnormal production process parameters. Maintenance and reliability personnel use process trend plots as another indicator of machinery health. Earlier detection of abnormal conditions facilitates more time for root cause failure analysis and the flexibility to schedule maintenance at the most convenient time, thus contributing to increased asset availability and lower inventory costs.



## SKF @ptitude Decision Support

### Expands ODR to optimize asset efficiency

Integrating SKF @ptitude Decision Support software with the SKF @ptitude Monitoring Suite greatly expands your ODR capabilities. SKF @ptitude Decision Support uses the common SKF @ptitude Monitoring Suite platform to provide all departments with a dynamic resource for automated machine and process diagnosis, analysis, reporting and corrective actions. Additionally, SKF @ptitude Decision Support software captures and records your production and machinery health events and maintenance knowledge – a powerful resource for future use.



## SKF Microlog Inspector hardware system



Designed to work with SKF Microlog Inspector and SKF @ptitude Monitoring Suite software, a range of ODR equipment is available from SKF to help ensure the success of your programme.



Collect Measurement  
State  
Pump 312

Is the machine:

- Running
- Not running
- Un-available

Buttons: Skip, Cancel, Skip, OK

New Data Entered

Easy-to-input screens facilitate operator inspections and record observations accurately and consistently.



# Why SKF for ODR?

## More than a century of rotating machine expertise

The Operator Driven Reliability programme from SKF is backed by more than 100 years of SKF experience with rotating machine efficiency and reliability. Through close working relationships with our customers, SKF has developed a unique and intimate understanding of the processes and challenges specific to every major industry, from paper, power and petroleum to metals, mining and food processing. Odds are we even helped develop some of the equipment in your plant.

## A customized programme to optimize asset efficiency

Because we understand the processes involved in your business, we can help you identify improvement opportunities that will produce the best return on investment. SKF prepares a detailed business case for your ODR programme that meets your business objectives and is based on documented results in your industry.



The ODR programme from SKF also aligns with our Asset Efficiency Optimization (AEO) process – a proven asset lifecycle management methodology that forms the basis of all SKF Asset Management Services. SKF ODR can be integrated easily with several other SKF Asset Management Services, including Proactive Reliability Maintenance (PRM) and Predictive Maintenance (PdM) programmes.

## Support from design to deployment and beyond

After working closely with you to design and develop a customized programme, SKF then handles every detail of installation, remaining with your team during programme implementation and deployment. Our services include expert staff training, ongoing product and process support, and doing whatever it takes to create a successful programme.

Bottom line? Our ODR programme leverages a range of SKF resources to help your operators become the first line of defense in a reliability-based asset management strategy – one that can deliver dramatic, continuous improvements in your operations, productivity and profitability.





### The real-world success stories start with our own

When we say that an Operator Driven Reliability programme from SKF drives tangible, bottom-line results, we're speaking from experience. SKF has been using the programme in our worldwide manufacturing plants for more than a decade.

By allowing SKF operators to become an integral part of our overall asset management strategy, SKF ODR has allowed us to virtually eliminate unplanned downtime. In the process, we've increased productivity, profitability and cross-functional communications. We've done the same for many other companies, and we're confident that we can do it for yours. Here are just two examples of how SKF ODR is helping innovative companies optimize their assets:

#### Petrochemical industry



A major petrochemical refiner adopted the Operator Driven Reliability process from SKF to improve equipment reliability, enhance feedback to operators, foster cross-functional teamwork and instill a culture of operator accountability for the equipment they used.

Within a year of implementation, mean time between failures (MTBF) of process pumps increased 15 %, while pump maintenance costs decreased 12 %. Additionally, total maintenance spending decreased 10 % and reliability issues identified by operators resulted in over \$350 000 in cost savings.

Overall, SKF ODR helped the refiner increase revenue, reduce costs, eliminate paper rounds and redundant reporting, and enjoy prompt access to data for faster business decisions. Based on these results, the refiner is expanding its SKF ODR programme to its other refineries and chemical facilities worldwide.

#### Paper industry



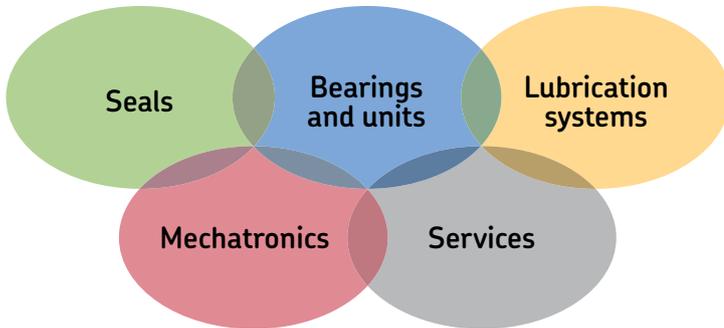
Hoping to increase equipment reliability and reduce operating costs, a global paper producer implemented key reliability strategies companywide, including the Operator Driven Reliability programme from SKF.

For one facility, SKF ODR improved Overall Equipment Effectiveness (OEE) by 2 % for

nearly \$2 000 000 in savings. The programme also reduced maintenance spending by 20 % and major equipment failures by 25 %, greatly reducing unscheduled, failure-related downtime.

The facility attributes much of this success to operator influence on overall reliability. Operators can now react quickly to changes in equipment health and perform routine tasks and adjustments, allowing reliability and maintenance personnel to focus on complex equipment problems. Operator observations and improved communications prompt corrective actions, including work notifications sent to the CMMS to initiate work orders.

***For more information on Operator Driven Reliability from SKF, contact your local SKF representative, or visit [www.skf.com/reliability](http://www.skf.com/reliability).***



### The Power of Knowledge Engineering

Drawing on five areas of competence and application-specific expertise amassed over more than 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management services. A global presence provides SKF customers uniform quality standards and worldwide product availability.

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