



Customer
Success
Story

We pioneer motion

A monitoring app sees RED and prevents unplanned downtimes at the exhauster

The international French cement and building materials company Vicat, in Saint Egreve were looking for a monitoring solution for their large kiln exhausts that would prevent unplanned failures and reduce time consuming inspections. Vicat turned to the Schaeffler Service Partner FIABTECH in France for this purpose. The condition monitoring solution Schaeffler OPTIME (CM) was chosen.

In just four months, OPTIME CM prevented two unplanned downtimes.

Customer benefits

- Vibration expert always available
- Continuous monitoring and good insight into trends via app
- Unplanned downtimes are reduced to a minimum
- More security for the process



Customer
Vicat, France
Sector
Cement
Application
Exhauster
Solution
Condition Monitoring



Exhauster

accomplish a lot in
dusty environments
with high temperatures

What drives our customer ...



Vicat is a member of the Natural Capital Accounting Workshop of the Business and Biodiversity Platform and works with a range of stakeholders to maintain ecological balance.

Challenge

The exhausters are classified among many other machines as critical in the Saint Egrève cement plant. The gigantic exhaust fans have the task of sucking the combustion air out of the rotary kiln. The hot air is used as process heat for the further processing of the raw material – for example for the pre-drying process – and is passed on via air gas channels.

All components, especially the bearings of the exhausters, are subjected to high stresses.

Unplanned downtimes can occur due to imbalance and lubricant failure caused by high temperatures and contamination. For this reason, exhausters have to undergo extensive inspections throughout the year.

Olivier Freret, chief of electric maintenance, at the Vicat-side Saint Egrève describes the challenge as follows:

When an unplanned failure occurs on the drive of the exhaust fan, in the worst case it could mean we have to shut down the rotary kiln. The material in the kiln could cool down and have a huge economic impact. We would like to replace the time-consuming inspections with solutions that offer us more security and planning reliability.

With this request, VICAT turned to Schaeffler's partner FIABTECH.

Technical information – Exhauster

Motor

Power	200 KW
Speed	990 RPM

Drive V-Pulley	Φ 450 mm
Receiving V-Pulley	Φ 450 mm

Fan blades	12
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What Schaeffler does ...

Solution

Schaeffler experts recommended the condition monitoring solution OPTIME CM. The scalable solution consists of wireless sensors, a gateway and digital services based on proprietary Schaeffler algorithms.

In a pilot, a few sensors were initially installed on two exhausters at different locations. Four months after installation, a change in machine status at one of the exhausters was indicated on the OPTIME app.

First alarm message at the back bearing

OPTIME CM identified unusual behaviour at the bearing (Fig. 1). The bearing was then dismantled. During the investigation, a strong current flow was detected.

Second alarm message on a gearbox bearing

OPTIME CM issued a red alarm on the gearbox bearing (Figure 2). The bearing has not been properly lubricated. The bearing should be replaced at the next scheduled inspection. In the meantime, maintenance made sure that the bearing was lubricated in the correct way.



Figure 1: The status of the machine changed on 19 September.

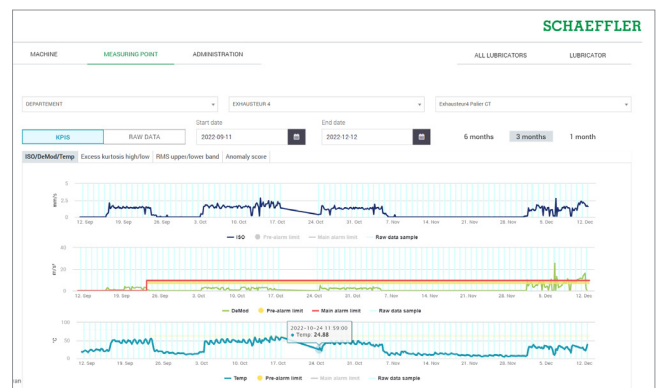


Figure 2: The machine status changed again on 07 December.

Warnlevel

① = Normal ② = Suspect ③ = Warning ④ = Severe

What's special

In total, 18 sensors have now been installed on different bearings and units on four exhausters. Impressed by the professional service provided by Schaeffler partner FIABTECH, another pilot was started with the OPTIME C1 intelligent lubricator from the OPTIME Ecosystem*.

Next upcoming project: ProLink CMS to monitor the ball mill. This is a multi-channel online condition monitoring system. It can be used for machines with variable operating conditions and harsh environmental conditions, such as surface temperatures exceeding 70 °C.



OPTIME CM is mounted on a motor



OPTIME CM is mounted on a housing



Pilot: OPTIME C1 lubricator is mounted on a motor

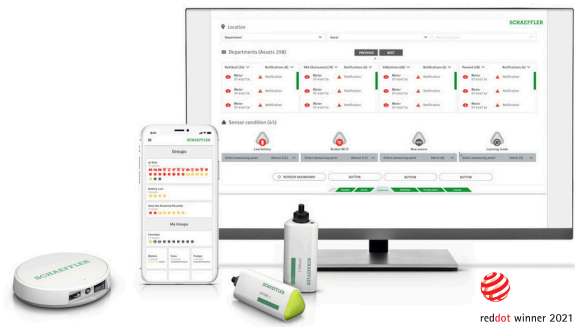
What Schaeffler does ...

How OPTIME CM works

The sensors monitor machinery and equipment at the customer's site. The gateway receives the data from the sensors and transfers these to the Schaeffler cloud.

OPTIME CM detects problems, sends alarms accordingly and provides information on the possible cause of the problem.

Expert knowledge of condition monitoring is not required as this knowledge is already integrated in OPTIME CM in the form of Schaeffler know-how.



OPTIME sensor specifications

Vibration bandwidth	OPTIME-3: 2 Hz – 3 kHz
Calculated parameters	7
Sensor commissioning	NFC (Near Field Communication)
Communication	Wirepas Mesh (2.4GHz ISM Band)
Measurement cycle	Parameters: every 4 h Time waveform: every 24 h

* This is how the OPTIME Ecosystem works

The OPTIME Ecosystem consists of many elements that work together to reduce downtime. It begins with our OPTIME User Interface that you can use to get a complete overview of all your machines and lubrication points.

The intuitive mobile app, dashboard and expert viewer mean you always have easy access to the right information at the right time, no matter where you are.

This is made possible by OPTIME Cloud & Analytics. With extensive processing power and capacity, it takes huge amounts of data and makes it easy to understand and work with.

This data comes from your OPTIME vibration sensors and smart lubricators via the OPTIME Gateway: a standalone device that makes secure cloud connectivity and IT integration easy.

Connecting all OPTIME devices is the automatic and self-healing OPTIME Mesh Network. Easy to set up, the mesh network needs low energy and makes large-scale installations possible.

So you can monitor your machines from wherever you are with OPTIME Condition Monitoring and simplify the lubrication of your machines with OPTIME C1.

The OPTIME Ecosystem also includes the OPTIME Connector Service and the OPTIME REST API.

The OPTIME Connector Service lets you connect other devices to the OPTIME Ecosystem quickly and easily.

The OPTIME REST-API makes it easy to connect your OPTIME Ecosystem to other existing systems.

What our customers say



Eric Basso, chief maintenance mechanic and Olivier Freret, Chief of electric maintenance, VICAT, Saint Egrève are thinking the same:

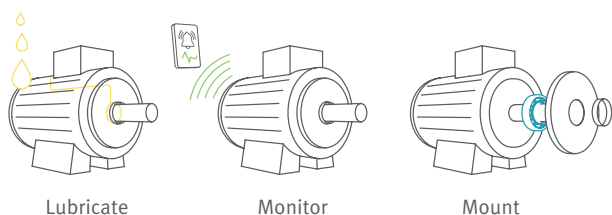
Initially, we were a touch sceptical about having our exhausters monitored with the OPTIME solution. But we started a pilot.

With success: we have already been able to avoid two unplanned shutdowns.

We are thrilled. And not only with the solution, but also with FIABTECH. We appreciate the profound knowledge and the professional service of the Schaeffler partner.

FIABTECH and Schaeffler – a good choice.

Left: Eric Basso, right: Olivier Freret



OPTIME CM, OPTIME C1 and ProLink CMS are part of the Schaeffler Lifetime Solutions portfolio, which offers a comprehensive range of products, services and solutions for industrial maintenance. It is designed to support maintenance engineers throughout a machine's entire lifetime.

www.schaeffler.de/en/lifetime-solutions

Customer

Vicat is an international family-managed group of companies that was founded in 1853. In total, the company owns 16 cement plants, 5 mill plants, 267 batching plants (concrete) and 72 quarries. Vicat has its own department, which promotes the reduction of the CO2 footprint and is represented in 12 countries.

FIABTECH & Schaeffler – Provide customer with added value

A trusting co-operation based on partnership connects the CAT II certified vibration expert FIABTECH with Schaeffler. Customers therefore benefit from many aspects: Solutions that increase bearing service life, reduce emissions, reduce maintenance effort, increase plant availability and save costs.