



An industrial IoT solution enables LINET to prevent accidents and production downtimes.

“With this solution, we managed to significantly reduce repair times and prevent production line downtimes and damage to components.

We can use the Industry 4.0 technology with minimal costs.

The solution turned out to work excellently, and we plan to deploy it on the second line, too.”

Luděk Marek
LINET
Maintenance and Facility Manager

1. REQUIREMENTS

- Prevent production downtimes and damage to a blasting machine
- Prevent the blasting machine from being buried in abrasive medium
- Reduce service costs
- Extend life and preserve investments into production machines
- Create a simple yet fully functional system for switching the machine off when a malfunction is indicated

2. SOLUTION

- Install sensors to shafts and bearings to measure temperature and speed
- Design and deploy analytical software
- Configure the machine shutdown sequence

3. OUTCOMES

- An automatic machine shutdown when a fault in the abrasive medium transport system is detected
- The prediction of probable bearing failure
- Reduced repair time
- Impending problems fixed without production disruption
- The elimination of damage to equipment

CASE STUDY

LINET

MANUFACTURING

SOITRON*

LINET is one of the iconic brands of Czech industry and a leading European hospital and nursing bed manufacturer.

The company has a manufacturing plant in Želevčice u Slaného in the Czech Republic, where they produce tens of thousands of high-quality beds a year and supply them to customers all over the world.

When a metal bedframe is made, individual parts are first welded together and then powder coated. To degrease and pre-treat the surface, the welded parts are blasted with steel grit using a continuous blaster. About twelve tons of abrasive medium flow through the blaster per minute.

The blaster blasts abrasive medium through a nozzle to clean, degrease, and smooth metal parts. The abrasive medium consists of small particles of corundum sand that are propelled at high speed to hit the passing metal bed parts.

Working with such material is difficult. The transport of the abrasive medium in the machine causes significant wear and tear to the machine parts. Linet was confronted with occasional failures in the abrasive transport equipment caused by malfunctioning motors and bearings as well as steel parts that come loose and

fall through the mesh screen and into the screw conveyor. This leads to the electric overloading of the motor and an immediate shutdown of the entire machine. Subsequently the machine gets buried in the abrasive medium, which in turn leads to production downtimes and the necessity to manually remove several tons of abrasive medium, which sometimes takes as long as two work shifts.

"These problems occurred once every two to three months. In addition to stopping the production line, it also caused physical damage to machine components. That is why we agreed with the customer to install some monitoring to prevent the abrasive overflow," says Ondřej Krob from Soitron, who helped LINET with the problem.

Industry 4.0, a simple solution

Soitron's specialists focus on the modernization of industrial machines that lack advanced automation features. This has enabled them to help LINET without needing any costly investments or replacement of the equipment the customer had already invested in.

Firstly, they analysed the environment and proposed a proper solution which consisted of installing sensors on the key shafts and bearings of the blast line. The sensors measure speed and temperature. The values measured by the sensors are analysed by a special software running on the industrial control computer.



Photo source: LINET spol. s r.o.

“The sensor system we supplied is fundamentally simple, which is fully in line with our vision and the customer’s expectations. In this way, we can quickly modernize the production technology and prevent accidents.”

Martin Hummel
Soitron, Product Manager

When these sensors detect a stoppage or slippage of any of the monitored machine parts, the machine automatically closes the abrasive medium supply valves and initiates the machine shutdown sequence.

This reduces the amount of abrasive medium that remains in the machine after its emergency shutdown, thus preventing the machine from being buried in it. The system from Soitron sends an e-mail notification to the maintenance staff so that they can immediately address the issue.

At the same time, an alarm message appears on the computer monitor in the maintenance control room explaining which component caused the problem.

“With this Industry 4.0 solution, we have significantly reduced repair times and prevented line downtimes. The solution

turned out to work excellently, and we plan to deploy it on the second line, too,” says Luděk Marek, the Maintenance and Facility Manager at LINET.

In addition to automatic problem detection, LINET staff use a web application that shows them current operation data. It is also possible for them to adjust parameters such as the speed at which the machine should be stopped without the need for any intervention from the supplier.





Photo source: LINET spol. s r.o.

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Ondřej Krob
Soitron, Kye Account Manager

Custom solution

It took about two weeks for Soitron's specialists to implement and commission the sensor system. Technicians could only work on the blasting machine at night and during the weekends because it was in full operation during the day.

“The sensor system we supplied is fundamentally simple, which is fully in line with our vision and the customer's expectations. In this way, we can quickly modernize the production technology and prevent accidents,” adds Hummel.

LINET

LINET spol. s r.o.

LINET is the world's leading manufacturer and innovator of hospital and nursing beds. The company has twenty subsidiaries worldwide. It employs around 1,800 people and delivers over 60,000 beds to clients annually. Since its establishment in 1990, it has been based in Želevčice u Slaného in the Czech Republic, where it also has its manufacturing plant. Since 2011, it has been part of LINET Group SE – a multinational holding company based in the Netherlands.

www.linnet.com

SOITRON, member of SOITRON Group

Soitron is a Central European integrator operating in the IT market since 1991. The company's philosophy is to constantly move forward, and that is why it is a leader in implementing unique technologies and innovative solutions. It offers its clients products and services in the field of robotization and process automation, cybersecurity, data centres, IoT solutions, IT outsourcing, communication and network solutions, IT support and advisory. Its product portfolio includes smart police car solutions – Mosy and cybersecurity services – VOID Security Operations Center.

Soitron is a part of the Soitron Group and employs more than 800 international experts. The group brings together professional teams in Slovakia, the Czech Republic, Romania, Turkey, Bulgaria, Poland, and the UK.