



**CSM Heartbeat**



# CSM Heartbeat

Acoustic Monitoring of Circular Sawmills  
Higher productivity and lower costs

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**WE  
CUT YOUR  
COSTS!**



Return of Investment in just a few months!

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# Raw material of the future

## Care and cost optimisation through acoustic monitoring

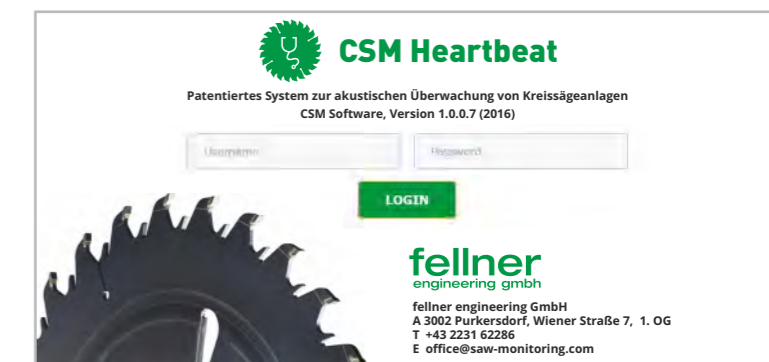
Too little attention has been paid to the expanding timber industry in the shadow of the digitalisation and electronics boom over recent decades. Wood has moved into areas which were still unimaginable a few years ago, not just as an alternative source of energy, but above all as a building and construction material.

Wood is a valuable raw material. The necessary cost-efficiency requires continuous rationalisation and extremely careful handling. The sawmill industry provides a reliable supply of raw material cut to precise sizes for processing companies. Standard products have become tailored cuts, which are now already offered in batch sizes as small as 1. As in all production companies, cost and time pressures are also growing in the sawmill industry. The most efficient use of available resources is required. CSM Heartbeat can make a significant contribution here – through acoustic monitoring of circular saws.

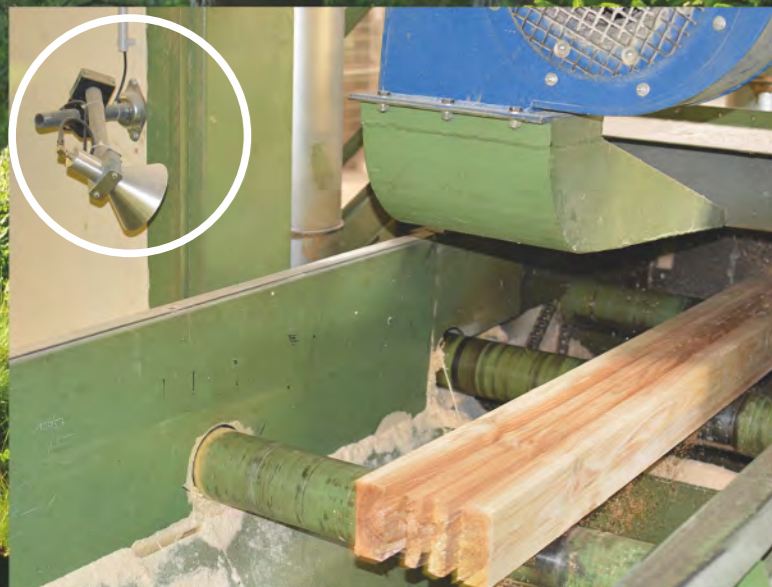
**PATENTED**



SPL measurement (upper trace): At 16:35:59 the noise level exceeds the set limit value (red zone), immediately the system briefly decelerates the feed rate. Therefore any damage to the saw blades is prevented. Lower curve (green zone): history.



Login to Software CSM Heartbeat.



The patented CSM Heartbeat system was awarded with innovation prizes by Schweighofer and the Lower Austria Chamber of Commerce.

# Acoustic circular saw monitoring

## Listening to the system's heartbeat

Saw blades are the „heart“ of a saw mill. The precision cutting and longest possible service life of the blades have a crucial influence on the quality of the cut and the overall costs of a sawmill. Equipment manufacturers offer motor management through power monitoring to get the best possible protection for the saw blades. With „hard streaked“ or „twisted“ logs – so-called reaction wood, and with blunt saws, there is higher power consumption and the feed rate is reduced. This system is sluggish and slow and so does not enable optimum protection of the saw blades.

Finally, CSM Heartbeat allows to increase the overall speed of the sawmill, thus improves the output of the whole sawing plant – it has the same effect as „chip-tuning“ with cars.

The CSM Heartbeat system monitors the „heartbeat“ of the saw blades like a stethoscope. Every slight noise is registered and appropriate impulses are immediately sent on to the control unit of the sawing line. Before the motors even start to take up more power due to the higher load, the acoustic circular saw monitoring system counteracts this. CSM Heartbeat reduces the feed rate – often just for a second, so as to prevent any “pinching” and so damage to the saw blades. After this short reduction, the sawing plant immediately carries on again at normal speed.

### Your cost saving

- higher productivity – better efficiency, higher throughput
- lower saw blade wear – shorter set-up times, less sharpening work
- higher product quality – less waste, higher cutting accuracy
- lower material consumption due to thinner saw blades
- processing of larger logs possible due to higher saw blades
- fewer complaints – higher customer satisfaction
- reduced saw blade costs due to optimised maintenance cycles – the MAV indicates the real wear which determines the moment of maintenance

**Return on investment (ROI) guaranteed in just a few months!**



*One day record of MAV (Moving Average) indicates the wear of the saw blades. It is a sign of increasing wear if the MAV rises. Thus the optimum time for changing the saw blades can be determined.*



*History of CSM Heartbeat. Sound pressure level, average value and feed rate within 1 hour.*

# CSM Heartbeat

## What our customers say

**CSM Heartbeat has been in use in European sawmills since 2014 and is currently enjoying increased interest in Canada and the USA. Customers who have been with us for many years stress the advantages of acoustic monitoring.**

■ *With the help of the CSM Heartbeat system we could significantly reduce the costs of saw blades and decrease waste production. We also could better approach the (speed) limits of thinner saw blades.*

**Matteo Binder, Managing Director of Binderholz GmbH**

■ *At the start, I could not have imagined that this system would deliver such a big increase in efficiency, especially as the measurement is so inconspicuous. Our saw manager and the sharpening experts are impressed – and I am now too.*

**Wolf-Christian Küssert, Managing Director of GELO Holzwerke**

■ *The CSM Heartbeat system enables us to determine the optimum time for changing the saw blades. This has allowed the service life of the saw blades to be extended from about 8 hours to up to 24 hours.*

**Günter Hilmer, Managing Director of HIT Holzindustrie Torgau OHG**

■ *The additional control of the feed rate by the CSM system means the saw blades keep their rigidity significantly longer and do not become soft. This leads to considerably longer service lives and delivers a substantial cost saving.*

**Heinrich M. Seuffert, Managing Director of the HMS-HOLZ Group**

## Set-up, function, installation & service of CSM Heartbeat

CSM Heartbeat is very easy to set up: it comprises an acoustic sensor (microphone), an electronic unit and the CSM software, always in the latest version. The microphone continuously monitors the noise level (SLP) of the saw blades. If a value is registered by the microphone which is above the limit set, therefore indicating imminent “pinching” or an overload, then the CSM electronics and software immediately send a command to the sawing plant's control unit resulting in a short reduction in the feed rate, and the plant is soon running at normal speed again.

This „advance listening” enables the feeding speed to be substantially increased – by up to 30%! Saw blades that are up to 1/3 thinner and also higher can be used without any risk.

In addition, the maintenance cycle of the saw blades is optimised by measuring the Moving Average level MAV. If the saw teeth become blunt, the MAV increases. This allows the optimum time for maintenance to be determined. Re-sharpening is therefore determined by the actual wear and not by the operating time. The service life of the saw blades can thus be extended several times over.

Two to four measuring systems are installed per sawing line, depending on the size of the plant. It only takes a few hours to install CSM Heartbeat. The work is carried out by our engineers. It is possible to maintain and check the system 24/7/365 all over the world using remote maintenance.

