

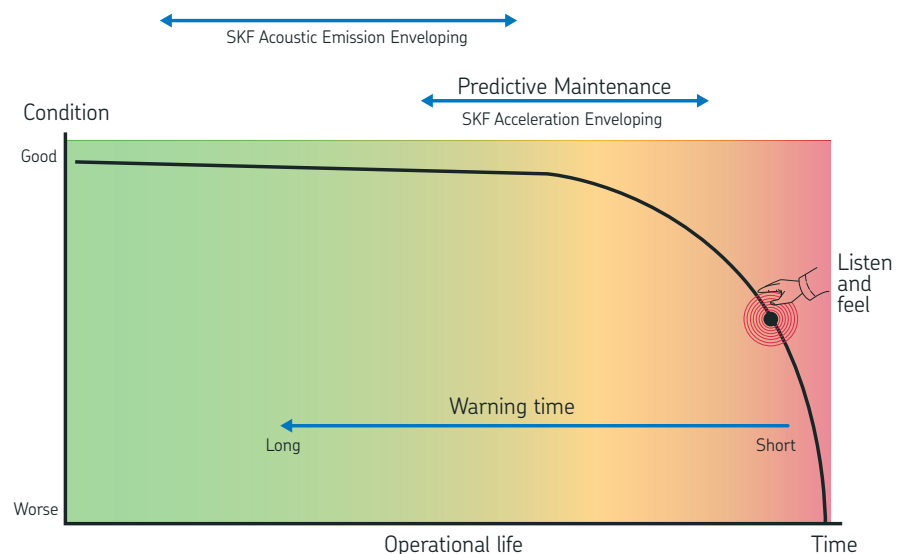
Extend warning time and reduce the risk of bearing failure using SKF Acoustic Emission Enveloping

SKF Acoustic Emission Enveloping is specifically developed to detect lubrication problems in bearings and other lubricated mechanical components such as gears. This signal analysis technique can detect signs of potential problems before bearing damage actually occurs, further extending the warning time to failure.

A multi – parameter approach to condition monitoring

SKF offers a world leading range of condition monitoring technologies which leverage a multi-parameter approach to measuring the critical variables that can be used to identify condition.

SKF Acoustic Emission Enveloping adds to this approach, further extending the warning time of potential bearing damage, providing a method of monitoring bearing lubrication quality and issues that is far more sensitive than other techniques currently on the market. This allows for the lubrication issue to be corrected prior to damage occurring to the bearing.



What is acoustic emission ?

Acoustic emission is the phenomenon of sound generation in materials under stress. Due to its ability to detect the formation and growth of cracks or defects, acoustic emission is a widely used technique for monitoring the condition of safety-critical and production-critical systems such as pressure vessels, engines and high-speed machinery.

SKF Acoustic Emission Enveloping

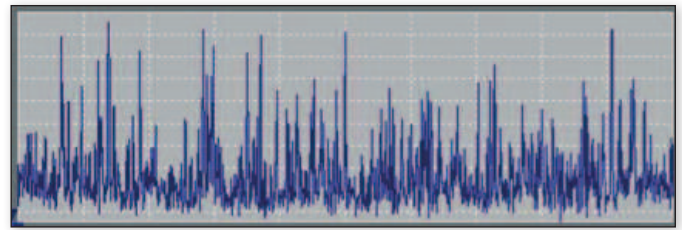
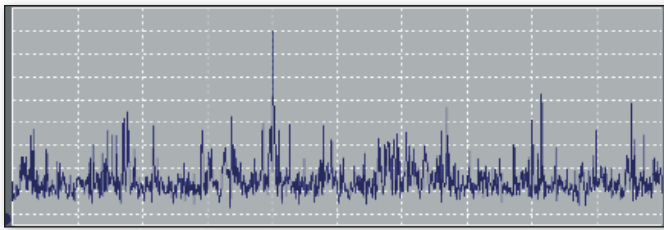
SKF Acoustic Emission Enveloping (AEE) detects lubrication film breakdown and contamination in the lubrication. An acoustic emission signal is band-pass filtered, rectified and enveloped. Analysis is then performed using standard condition monitoring tools. SKF AEE enables early detection of lubrication problems increasing significantly the warning time prior to failure facilitating early intervention and problem rectification.

SKF AEE System

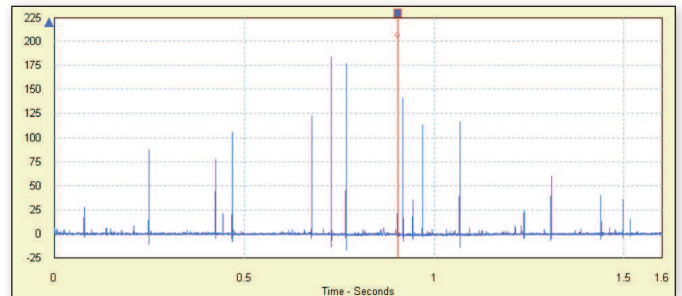
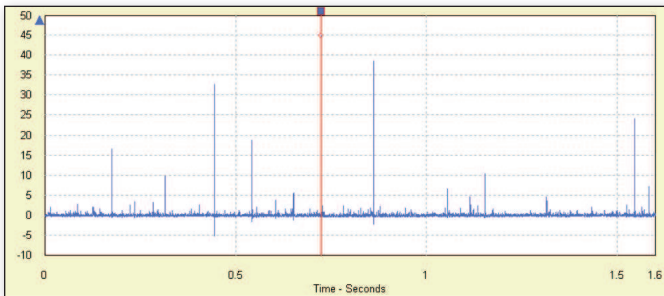
An acoustic emission signal can be acquired using SKF CMSS 786M sensors. This raw acoustic emission signal is then processed and enveloped using the SKF CMON 2504 interface card. This interface card is intended to extend the functionality of the SKF Multilog On-line System IMx to include SKF Acoustic Emission (AEE) technology.

Proven Technology

Through controlled tests both in test environments and in the field, SKF AEE technology has been proven to detect lubrication breakdown and lubrication contamination in bearings.



AEE time waveforms showing slight (left) and a large amount (right) of metallic particle grease contamination



AEE time waveforms showing early (left) and late (right) of lubrication breakdown. Note difference in scale between graphs.

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