Kerntech Diagnose-System
Loose Part Monitoring System

Detection and Localization of Loose and Detached Parts in Pressure Vessels

Features of KeDiS Solid-Borne-Sound Monitoring System

The KeDiS is an automatic solid-borne-sound monitoring-system with powerful functions for detecting, analyzing and logging of burst-events. Its features include: alarm-signalling and burst-localization, intelligent yet easy to configure detection logic as well as in-depth diagnosis. By these means, KeDiS provides a proven and reliable monitoring of vessels and structures for detecting loose parts or crack sounds.

Main Features

- The system offers many criteria for the definition and detection of burst-events (including "bust-max", "crest-factor", amplitude slew-rate)
- Comprehensive set of logic-methods to allow for suppression of false alarms originating from normal operational acts; furthermore, "well-known" patterns of burst-events can be defined
- Semi-automatic localization of bursts with user guidance and 3D display of vessel and localized spot
- Intuitive diagnosis tools including signal filtering, determination of delay/offset of bursts and computation of spectra
- Integration of signals from existing process control to expand the logic for burst detection
- Intelligent management of alarm conditions and alarm release

Custom-Made Design

We build your monitoring system according to your requirements and specification. We are pleased to fulfill any special requests both regarding hardware and software. For the development of your custom-made system we rely on an ISO-9001 certified process to ensure quality.

Reliability

Currently there are multiple, well-proven KeDiS Systems running in German nuclear power plants. All systems are certified according to EMC requirements and to German nuclear standards/regulations ("KTA 1401").

Further Functions

- Special functions for self-tests of the system ("periodical tests": integrity of measurement chains, triggering of an automatic impact hammer for test purposes, self-calibration)
- Extensive functions for data export and logging
- Custom-made design and fabrication of (charge) amplifiers with high immunity against noise and disturbance
- Galvanic isolation of signals to ensure highest security against backlash
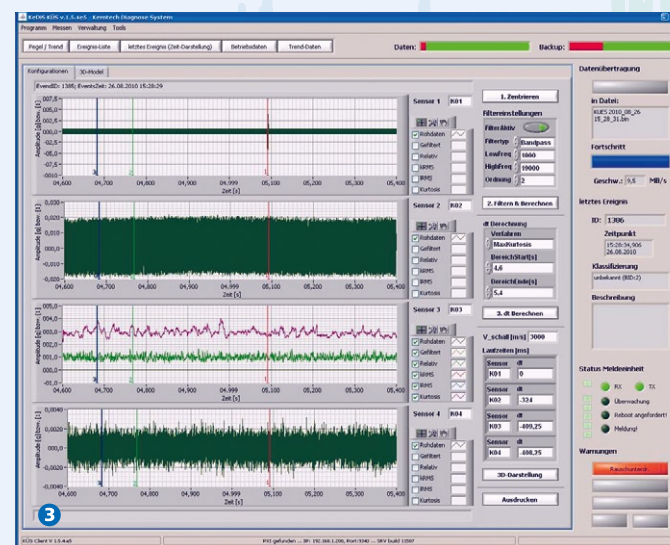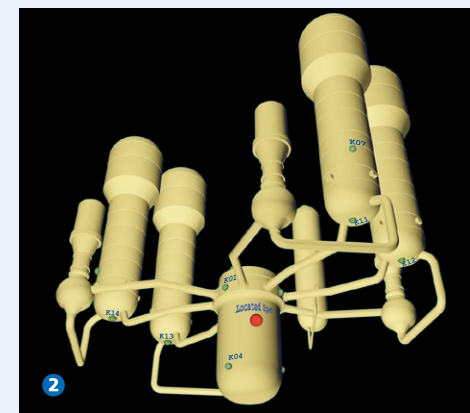- Software completely developed in Lab-

View®, the leading programming language for automation
- Many "components off-the-shelf" from nameable manufacturers (National Instruments, Phoenix Contact, Kistler) guarantee highest quality and product-support for many years

Our Services

We provide all the services related to bringing-into-service, specification test, validation and maintenance:
- Authoring of specification tests; coordination of validation tests with auditors
- Execution of all commissioning tests including EMC tests of electronic devices
- Assessment of recorded burst-events during operation to determine causes, severity, and to exclude artefacts/disturbances

Fig. 2: Monitoring the noise of a reactor pressure vessel: 3D display of the localized noise source

Fig. 3: Window for display and analysis of burst signals with rich features: native and filtered signal, floating RMS-values of short-term- and long-term-window, cursors

- Updating/authoring of periodic test instructions related to the system
- Compilation of circuit diagrams and connections schemes
- We offer the execution of all periodic tests as a recurring service
- We can provide tailored training material for any target audience, be it operators, technicians or engineers. Of course, we will also conduct hands-on instruction of the system or more in-depth trainings on loose part monitoring

Fig. 5: Updated preamplifier rack: new amplifiers integrated into legacy system

Fig. 4: Preamplifier with self test function

Fig. 6: Signalling unit: independent system health monitoring and clear display of status

KEDIS SIGNALLING UNIT

On	General Error	Burst Event	Alert Suppression
Error Mains	Error Postprocessor	Event Analyzed	Suppress Restart
Error AC/DC-Converter 1	Error Data Acquisition	Event Detected	Test Error Signalling
Error AC/DC-Converter 2	Error Ethernet	Event Pattern Known	Test Alert
High Temperature			Test LEDs

Kerntech Maschinen- und Anlagendiagnostik

Kerntech

How to find us...
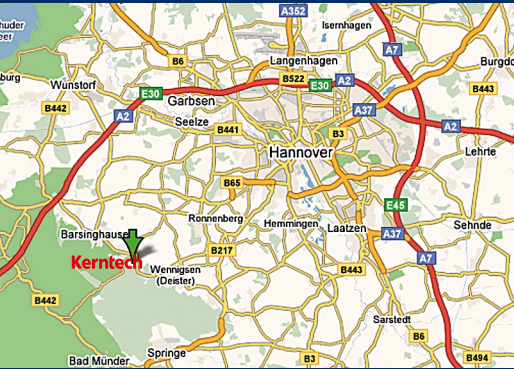
Leave the A2 at the AS Bad Nenndorf exit (38) towards Barsinghausen and follow the B65. Leave the B65 and drive straight ahead following the L391. Turn to your right on Nienstedter Straße (L401) after about 3-4 kilometres. Follow this road for approximately 70 meters before turning left in the street Neue Rehre. Leave the Neue Rehre and turn to your left in the Steinradweg. You find your destination on the right side at the Forsthaus.

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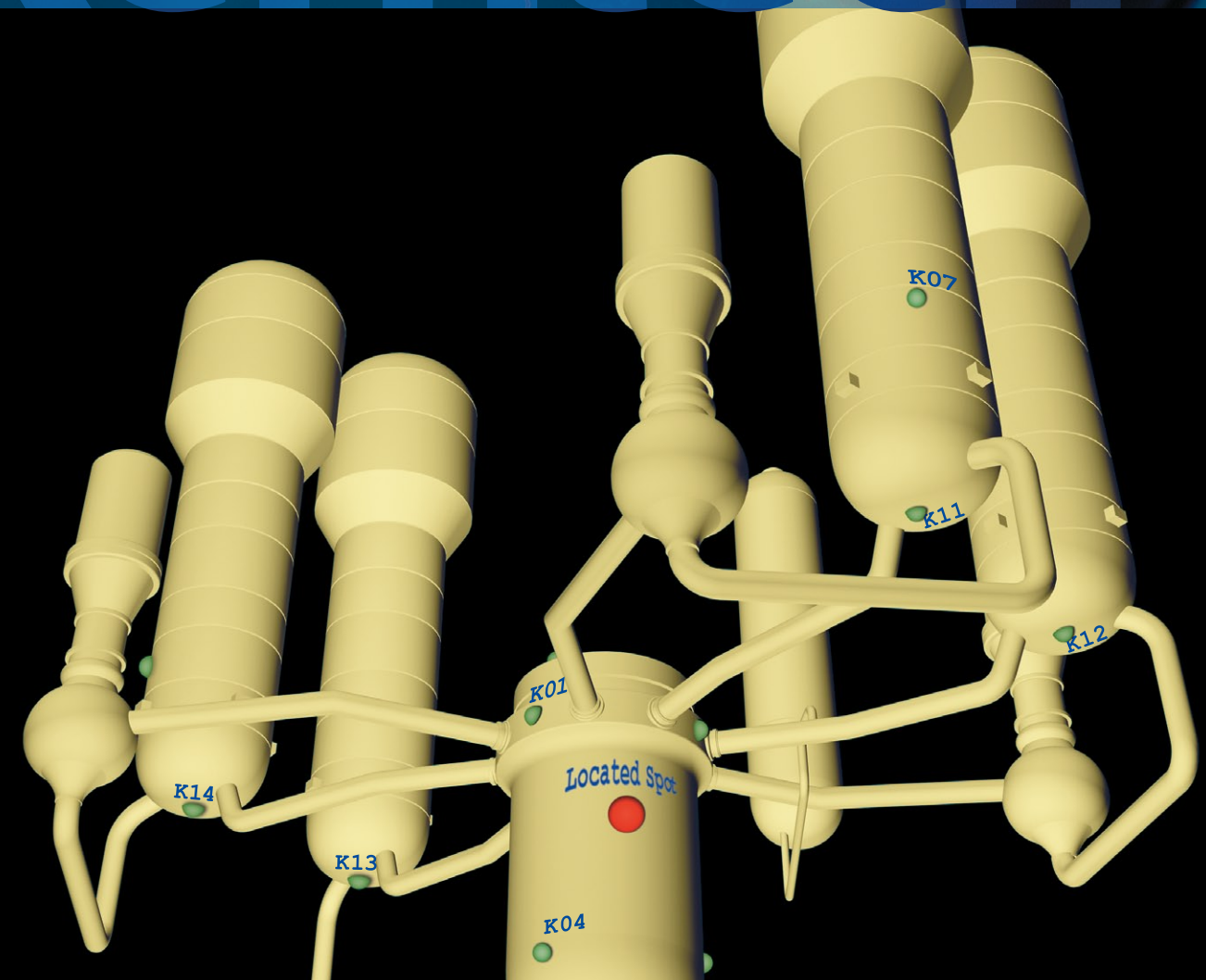HRB Hannover 59019

References:
In particular we have many years of work experience with:

Eon-Kernkraft
Eon Kraftwerke
Vattenfall
MTU
VW
Sincor
Richter Chemietechnik

Certified according to DIN EN ISO 9001:2008

Layout: Bernd.Schuster@xxsdesign.de

K07
K11
K12
K01
Located Spot
K14
K13
K04

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Loose Part Monitoring System