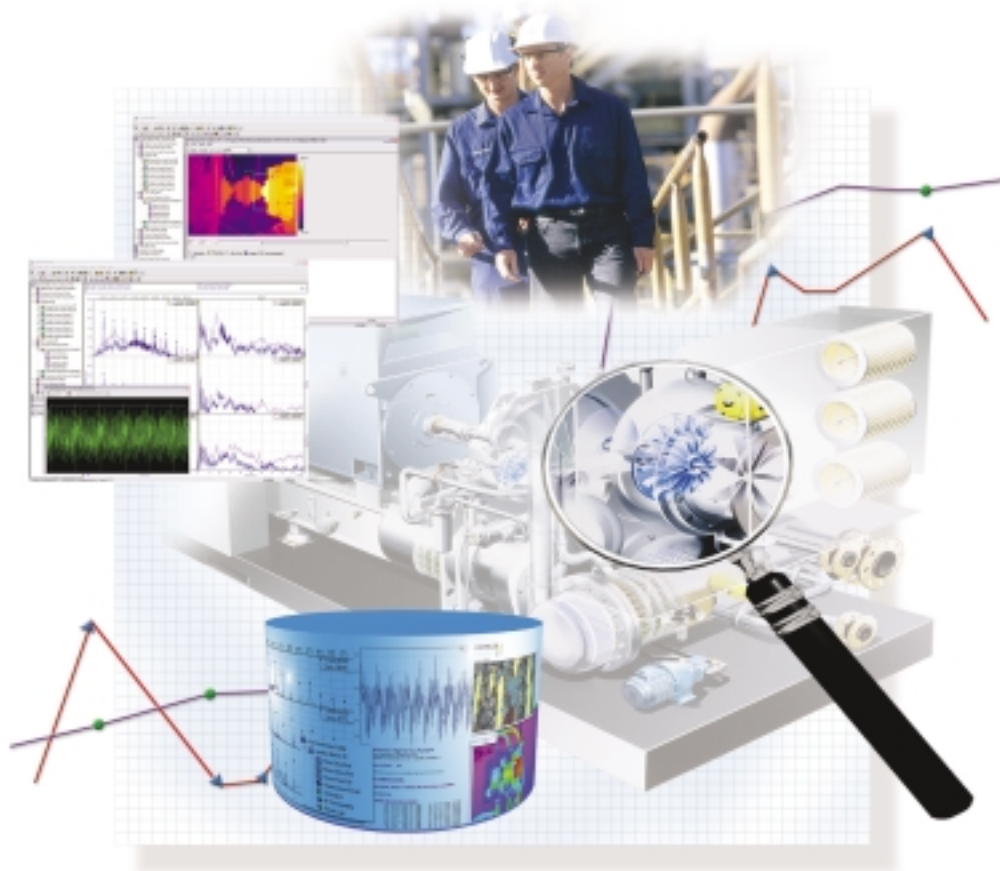


ALERT™ Analysis Systems

Machine Condition Assessment Software



DLI
ENGINEERING

DELIVERING MACHINE INTELLIGENCE



ALERT ANALYSIS SYSTEM

THE SUPERIOR DIAGNOSTIC APPROACH

A SUCCESSFUL CONDITION-BASED MAINTENANCE PROGRAM

reaps many rewards; lower maintenance costs, reduced downtime, fewer catastrophic failures and greater plant reliability. What does it take to implement a successful program today? You have to choose the right diagnostic approach.

DLI's ALERT ANALYSIS SYSTEM IS THE SUPERIOR CHOICE.

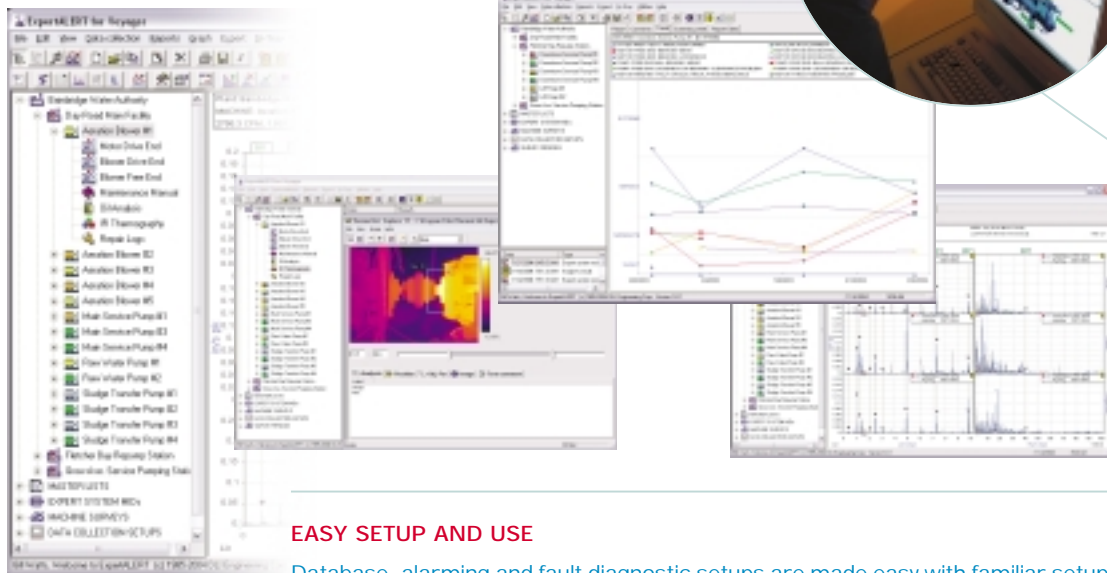
It is built on a proven, scientific methodology that far surpasses other condition monitoring systems. Driven by an unwavering pursuit of precise engineering standards, DLI has developed the world's largest and longest running machine vibration analysis program. Through these significant engineering feats, we have created vibration software products that are unmatched in our industry.

ALERT USERS BENEFIT FROM ADVANCED METHODOLOGY,

work flow technologies, unsurpassed automated diagnostics and tools for information analysis and distribution. From alarms to full diagnostics, ALERT Systems have flexible and cost effective options to match your program goals.



EFFICIENCY THROUGH SEAMLESS INTEGRATION



EASY SETUP AND USE

Database, alarming and fault diagnostic setups are made easy with familiar setup Wizards. Use our single, intuitive screen to access functions and information. On the left is a navigation tree and to the right is selected data and information.

>> **Integrate Multiple Technologies and Documentation**

PUT ALL YOUR CONDITION MONITORING TOOLS IN ONE PLACE. With ALERT's *User Defined Points*, plant managers can easily integrate content from other condition assessment programs and service centers directly into the ALERT navigation tree. Use ALERT as an information manager to track content such as reports, IR, oil analysis results, procedures, logs and more. ALERT synchronizes this data to other locations using DLI's *database replication capability*, offering you the power to distribute any document or CBM report to everyone in your replicating network.

>> **Integrate ALERT with CMMS**

CUSTOMIZE YOUR CMMS. Send machine condition information directly to your Computerized Maintenance Management System (CMMS) with ALERT's CMMS Link. While there are a broad number and multiple configurations of CMMS in use today, DLI has the technical support to configure the CMMS Link to your system.

>> **Vibration Analysis Tools Used by Professionals**

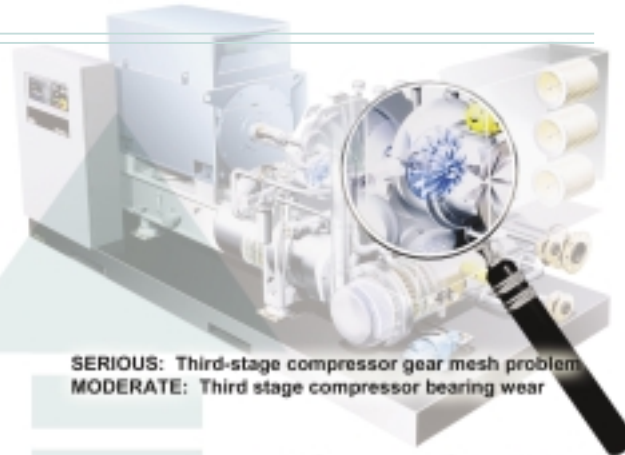
QUICKLY IDENTIFY AND CONFIRM MACHINE FAULTS. All ALERT systems include powerful, easy-to-use vibration analysis tools. Use traditional tools, such as harmonic and sideband cursors, overlays, zooming, waterfalls and more to aid your vibration analysis. Diagnose machine faults with DLI's intelligent order normalization, Cepstral plots, full spectrum, orbits, time synchronous averaging, Bode plots and automated screening and diagnostics.

ALERT ANALYSIS SYSTEMS
EFFICIENCY IN CONDITION MONITORING

ExpertALERT™

Our Most Advanced System

- Accurate automated diagnostics
- Automated repair recommendations
- Fault severity trending
- 650 diagnostic templates
- Online monitoring system support



SERIOUS: Third-stage compressor gear mesh problem
MODERATE: Third stage compressor bearing wear



- BridgeView Authority
- Day-Reach Facility
- Aeration Blower #1
 - Motor Drive End
 - Blower Drive End
 - Blower Free End
 - Maintenance Manual
 - Oil Analysis
 - PI Thermographs
 - Playbook

AdvancedALERT®

Automated Bearing Diagnostics

- Demodulated vibration analysis
- Automated spectral peak extraction
- Cepstrum analysis
- Bearing wear logical rules
- Noise floor calculations

StandardALERT™

Vibration Analysis Software

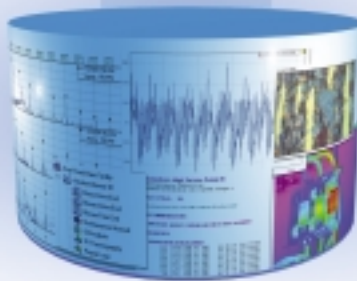
- Machine database management
- Technology integration
- High resolution data screening
- Spectral average baseline development



ViewALERT™

ALERT System Viewing Software

- Plant / Area / Machine Hierarchy
- Load / Unload data collectors
- Print reports and analyze data



ALERT's SQL Open Architecture Database

RELIABILITY THROUGH SUPERIOR DIAGNOSTICS

ACCURACY IS OUR PASSION.

It is also what makes our diagnostics superior. As a result, we have built the *most accurate diagnostic system available on the market*. Our rule-based, Automated Diagnostic System has been proven for over 25 years in the field by hundreds of military and commercial customers.



>> Rules vs. Simple Alarms

DLI's SOPHISTICATED RULE-BASED METHODOLOGY extends beyond simple monitoring of alarms on peaks or spectral bands. Our *test-point variation feature* captures and compares complex patterns detected from a set of various locations on your machine. By adding this machine-specific baseline data to the database, ALERT becomes a highly accurate diagnostic and prognostic system.

>> Automated Fault Detection

ALERT'S WEAR DETECTION ALGORITHMS combine a number of well-proven engineering techniques to detect and confirm the presence of machine faults. Our automated algorithms have been applied to more than a million machine vibration signatures with a very high rate of success.

>> Automated Bearing Diagnostics

BearingALERT™, DLI's BEARING FAULT DETECTION SYSTEM is bundled with ExpertALERT and AdvancedALERT. This bearing fault detection technology has proven to be superior to crest factor and shock-pulse techniques often used by competitive systems.

SHARE DATA THROUGH WEB-ENABLED TECHNOLOGIES

DLI Web Connect™

KEEP FIELD PERSONNEL AND SERVICE CUSTOMERS INFORMED INSTANTANEOUSLY. Remote distribution and database replication is easy with DLI's Web Connect subscription service. This secure, web-browser interface allows you to synchronize data and analyses from virtually any location served by the Internet.



PARTIAL LIST OF DIAGNOSED FAULTS

- Accessory Drive Gear Mesh Problem or Wear
- Angular Misalignment
- Attached Oil Pump Internal Wear
- Auxiliary Gear Mesh Problem or Wear
- Bearing Fit Problem
- Bearing Looseness
- Bearing Misalignment or Shaft Runout
- Bearing Wear
- Bent or Warped Shaft
- Blower Lobe Wear
- Blower Rotor Imbalance
- Blower Shaft Ball Bearing Wear
- Camshaft Drive Gear Problem
- Camshaft Problem
- Clutch Imbalance
- Clutch Misalignment
- Clutch Wear
- Compressor Impeller Wear
- Compressor Rotor and/or Idler Wear
- Cooling Fan Problem
- Coupling Wear
- Drive Belt/Chain Irregularity
- Drive Sheave Runout or Wobble
- Exciter Imbalance
- Fan Air Flow Problem
- Fan Blading Problem
- Fan Dirt Buildup or Blading Clearance Problem
- Foundation Flexibility
- Foundation Resonance
- Gearbox Input Shaft Misalignment
- Gearbox Input Shaft Pinion Problem
- Gearbox Oil Pump Gear Mesh Problem or Wear
- Gearbox Oil Pump Internal Wear
- Idler Shaft Looseness
- Imbalance
- Internal Looseness
- Internal Valve Plate Wear or Flow Restriction
- Journal Bearing Clearance Problem (Trapped Fluid)
- Journal Bearing Looseness
- Journal Bearing Oil Whirl
- Line Phase Voltage Imbalance
- Misalignment
- Motor Air Gap Problem
- Motor Stator Lamination Looseness
- Mounting Flexibility
- Mounting Looseness
- Oil Pump Internal Wear or Flow Problem
- Oil Pump Problem
- Oil Pump Shaft Looseness
- Piston Problem or Internal Wear
- Pump Air Ingestion or Flow Problem
- Pump Impeller Wear or Rotor Clearance Problem
- Pump Internal Looseness
- Pump Lobe Wear
- Pump Mounting Flexibility
- Pump Thrust Bearing Problem
- Pump Timing Gear Wear
- Pump Vane Wear
- Reduction Gear Mesh Problem or Wear
- Structural Resonance
- Timing Gear Wear of Mesh Problem
- Turbine Blading or Rotor Clearance Problem

MACHINE TYPES

ExpertALERT can accurately diagnose most machine types. The following machine types and components are included in its rule base.

- Turbines
- Motors
- Gear Box
- Couplings and Alignment
- Belts and Chains
- Reduction Gears
- Speed Increases
- Centrifugal Pumps
- Gear Pumps
- Axial Flow Hydraulic Pumps
- Axial Flow Propeller Pumps
- Sliding Vane Pumps
- Reciprocating Pumps
- Vacuum Pumps
- Centrifugal Fans
- Axial Flow Fans
- Centrifugal Compressors
- Piston Compressors
- Lobed Blowers/Compressors
- Generators
- Wind Turbines
- Purifiers
- Diesel Engines
- Spindles/Rolls
- Turbochargers

Call us today or visit www.DLlengineering.com to learn more about our ALERT Analysis Systems.



www.DLlengineering.com

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Since 1966, DLI Engineering
has provided leading
products and services to
commercial and military customers
throughout the world.
Call us today or visit
www.DLlengineering.com
to learn more about our
ALERT Analysis Systems.