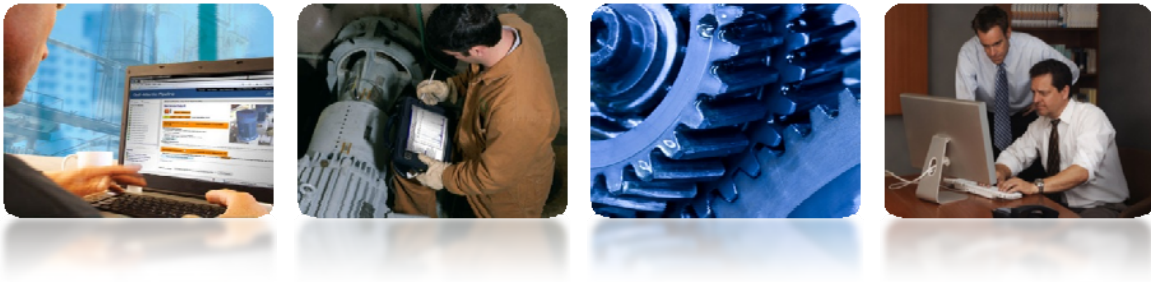


An Overview

The WATCHMAN™ Reliability System

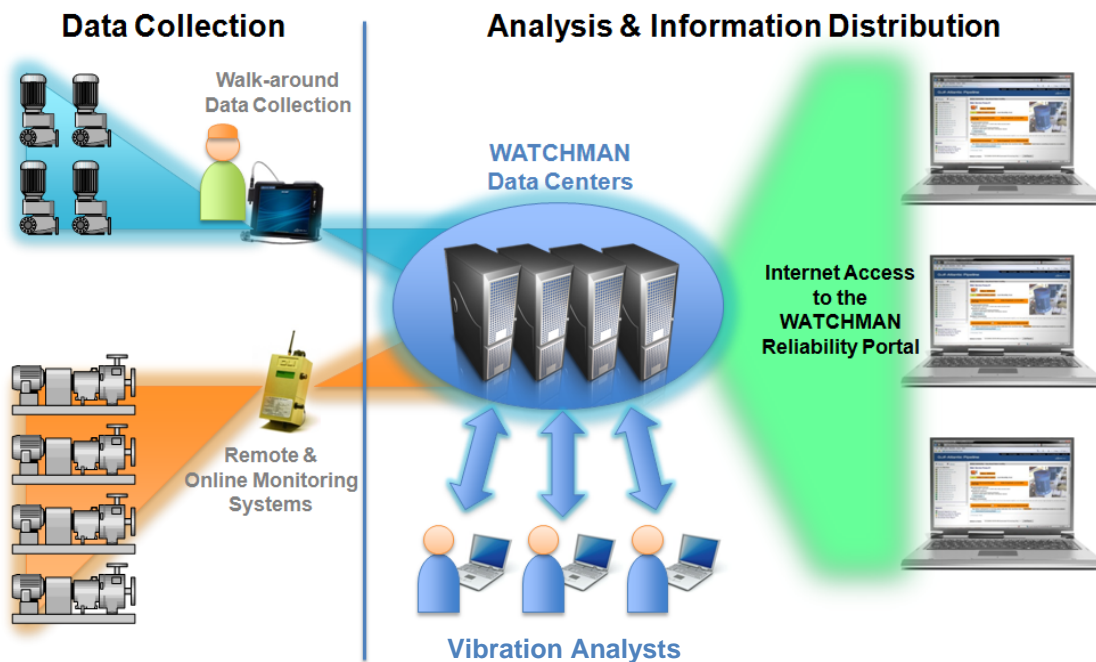
Revision 1.2



A managed condition monitoring system allowing companies to implement secure, scalable and efficient condition monitoring programs, hosted by Azima DLI, the global condition monitoring provider to commercial industry, transportation and the military.



The WATCHMAN Reliability System is an implementation of software, data acquisition instruments, proven methodology and secure web-based communications that provide a robust infrastructure that our clients use to realize a high quality, sustainable and well communicated condition monitoring program. Clients benefit from a hosted system that is managed by condition monitoring and IT experts, so you never need to worry about system uptime, software upgrades and information accessibility.



The WATCHMAN Reliability System is available to our customers as either part of our WATCHMAN Analysis™ service offering or as a hosted solution for your internal plant or enterprise-wide condition monitoring program. The WATCHMAN™ Reliability System is comprised of several proven elements.

- Azima DLI data collection hardware; DCA-60™, DCX™ and SpriteMAX™ online monitoring systems
- High availability, redundant Windows® 2008 Server™ systems operating at Qwest® managed data centers
- ExpertALERT™ Enterprise condition monitoring software
- WATCHMAN Reliability Portal™

Our clients benefit by using the same managed systems that Azima DLI utilizes to implement its professional reliability services to customers throughout the world.

At the core of the system is ExpertALERT Enterprise, a comprehensive condition monitoring program management tool, allowing for the collection, storage, and reporting of facilities machine condition and

related asset data. Multiple condition monitoring technology data and reports are stored and catalogued within the ExpertALERT system. Analysts utilize the full power of ExpertALERT through web-enabled Terminal Services.

Key Benefits

- Managers and Executives gain a holistic view of a plant's systems and machines through the web-based WATCHMAN Reliability Portal.
 - Plant machinery health, program statistics, historical information and reports are highly available to plant management so maintenance and operation planning can most effectively be employed.
 - Condition monitoring programs also become transparent and allow for better justification of performance and resources expended.
- For hosted solutions, should you need a second opinion or your analyst becomes unavailable, Azima DLI can be readily engaged to assist you through our "Analysis Ticket System"

Avoiding Hidden Costs

- IT infrastructure cost, depreciation & support time
- System training and delays in being productive
- Software & Support warranty costs

Our hosted solution includes:

- 24/7 access to your company-branded portal
- 24/7 access to ExpertALERT Enterprise for your analysts, via Terminal Services to the Azima DLI data center
- IT systems engineers are onsite at the data center, ensuring high availability of portal system
- Daily database backups
- Rental options are available for portable data collectors and online systems
- Azima DLI condition monitoring experts can be quickly commissioned if you require a second-opinion of a machine assessment
- Centralized machine condition data & report repository, available across your plant, region or enterprise

WATCHMAN Analysis™ Services

The WATCHMAN Reliability System can be coupled with Azima DLI's WATCHMAN Analysis services at any time for clients who lose critical internal analyst capabilities. Azima DLI has an extensive slate of machine experts that specialize in vibration analysis, infrared thermography, oil analysis, motor analysis and reciprocating engine and compressor analysis.

Key Benefits

- Your success depends on accurate and efficient machine analysis; Azima DLI has a full slate of experts in all key condition monitoring technologies.

- Experience that you can trust; Azima DLI has over 30 years experience in managing the largest and most successful condition monitoring programs in the world.
- Managers are assigned to your program to ensure your program performs as you expect, from data collection to report delivery. We assure that the highest return on your condition monitoring dollar.
- Consistent program results; the effectiveness of your program is not dependent on the availability of individuals. Plant machinery uptime is key to your profitability, you cannot afford to have sick-leave, promotion or attrition impact your bottom line.
- WATCHMAN programs can be designed as full turn-key solutions where Azima DLI does everything or you can participate in vibration data and oil sample collection to minimize costs.

Technical Description

Portable Data Collection

The WATCHMAN Reliability System is compatible with Azima DLI's:

- DCX - Diagnostic Data Collector / Real-time Analyzer
- DCA-60 - Vibration Data Collector / Real-time Analyzer

These data collectors can be purchased from Azima DLI or leased as part of your Hosted Solution, or WATCHMAN Analysis program. Leasing offers several advantages:

- No capital expense
- Warranty support/repairs included
- No-cost annual calibration
- Software/firmware updates

Specifications

- DCA-60: Embedded ALERT analysis software
- DCX: Embedded ExpertALERT expert automated diagnostic and analysis software
- Triaxial displays including FFT, waveforms, orbits, phase, waterfall and overall levels
- Premium triaxial accelerometer for efficient data collection of multiple axes/directions
- Run-up / coast-down measurements
- Detect roller bearing faults using envelope demodulation
- Orbit displays for detecting sleeve bearing faults
- Simultaneous three-channel data acquisition (4 channels with optional ALERT RTA software)
- Transfer data via USB cable or thumb-drive
- Microsoft® Windows® XP Tablet operating system
- Bright SVGA color display
- 802.11 a/b/g wireless networking
- Integrated Ethernet and USB ports
- Port replicator
- Certified for European Market (CE)

Online Data Collection

The WATCHMAN Reliability System is compatible with Azima DLI's SpriteMAX Expert Online Monitoring System. SpriteMAX may be purchased or leased as part of your Hosted Solution, or WATCHMAN Remote™ online monitoring program. Sensors and installation support are available from Azima DLI.

Specifications

- 16-512 multiplexed channels
- Vibration time waveforms, FFT spectra, envelope demodulation data, orbits, phase, speed, and overall vibration amplitude
- Process measurements including DC voltage and 4-20 mA current loop sensors
- Embedded rule-based diagnostic system that turns data into actionable information
- Online Dashboard for live, "at-a-glance" machine status
- Convenient web page interface for viewing data and machine condition status
- RSS Feeds via email client software or RSS Feed interface software

WATCHMAN Reliability Portal

The WATCHMAN Reliability Portal 2.0 provides three levels of access;

- The **Portal Web** subscription provides secure Internet web page access to your plant's machine condition analysis program database through any modern web browser, from any location. Enterprise/Plant/Area program statistics, machine detailed analysis and health history and the ability to print machine condition analysis reports. Unlimited Portal Web subscriptions are provided at no cost with any associated WATCHMAN Portal Analysis or WATCHMAN Reliability Services subscription.
- The **Portal Analysis** subscription provides full access to your plant's machine condition analysis program through ExpertALERT™ Enterprise running on Azima DLI's secure, web-accessible terminal servers. The Analysis-level subscription allows the user to setup machines, automated diagnostics, perform spectral analysis and develop reports using ExpertALERT via Microsoft Internet Explorer® (6.0 and later) web browser. It is identical to our ExpertALERT Enterprise automated diagnostic software.

The Analysis annual subscription includes:

- ExpertALERT Enterprise (1 seat) via remote terminal services
- Storage space 1000 MB
- 24/7 access via Internet – 99.5% uptime
- Perpetual Support Agreement
- Automatic Software Updates
- (1) DCA-60/DCX data collector replication to WATCHMAN Data Center
- Unlimited Portal Web subscriptions

- The **Portal Analysis Viewer** subscription provides the same ExpertALERT access as described above, to view and analyze data, without write permissions. This subscription is intended to augment a WATCHMAN Portal Analysis or WATCHMAN Reliability Services subscription.

IT Specifications

Portal Web

The portal web subscription provides full access to your machine health and program statistics through a Secure Socket Layer (SSL) encrypted Internet connection to our web servers. Users access the Azima DLI web servers at <https://www.WatchmanPortal.com>. A pre-assigned user name and strong password are required. Any WATCHMAN portal or services subscription includes unlimited seats of the portal web subscription. Users and passwords are managed by the customer.

Portal Analysis – Terminal Services Web Access

The analysis subscription provides full access to your machine health and program statistics through a Secure Socket Layer (SSL) encrypted Internet connection to our web servers. Users access the Azima DLI web servers with Microsoft Internet Explorer at <https://ea.WatchmanPortal.com>. A pre-assigned user name and strong password are required. Users and passwords are managed through the contract and Azima DLI's portal operations group.

The Portal Analysis system is accessed through a remote **Windows 2008 Server using Terminal Services Web Access**. Thin-client applications to access the remote system require:

- Internet Explorer 6, 7 or 8 with the Microsoft Remote Access active-X control installed. *At this time Mozilla Firefox, Google Chrome and other browsers are not supported*
- Outbound Internet connections via ports 443 (HTTPS), 3389 (TS Web Access)

Vibration Data Acquisition

Data that is collected on-site with portable data collectors (DCA-60 or DCX) is transferred to the remote data center through the Sybase Data Replication Engine. This data is transmitted by **encrypted message files** using File Transfer Protocol (FTP) to the remote data center.

- Outbound Internet connections via ports 20,21 (FTP)

Data that is collected on-site with online data collectors (SpriteMAX) is transferred to the remote data center through XML data files. This data is transmitted using File Transfer Protocol (FTP) to the remote data center.

- Outbound Internet connections via ports 20,21 (FTP)

Data Format, Archives and Transfer

Data is stored in a random access SQL database. Azima DLI uses an enterprise-class Sybase database engine. The database structure is compatible with commercially available, ExpertALERT and Sybase database software. Should you decide to take this condition monitoring program in house at any time in

the future, ExpertALERT and Sybase database software may be installed on your own personal computers or servers to have full access to your historical data.

All customer databases are backed up nightly. In the unlikely event of catastrophic data loss, Azima DLI IT engineers are able to restore your previous night's backup.

Customer data is owned exclusively by customer. Customer data is considered confidential information. Azima DLI may access your database to perform machine condition analysis services, respond to service or technical problems or at the customer's request. Azima DLI reserves the right to use our customer's databases for the purpose of improving our software through data mining and anonymous case history development. We will never associate your company or plant name to any case history without the explicit, written permission of our customers.

Upon request by the customer, Azima DLI will provide a mirror copy of the customer database file and deliver it to the customer address that is on file, by courier (fees apply). Customer data will never be delivered to any alternate addresses. After thirty (30) days following termination of the WATCHMAN services, Azima DLI shall delete all Customer Data in its systems or otherwise in its possession or under its control.

Training

Azima DLI provides a complete line of condition monitoring training, including fundamentals of machine condition monitoring, machine preparation, data collection, data analysis, and ExpertALERT software training.

Support Services

WATCHMAN Reliability System support is available Monday-Friday 8:00 AM to 7:30 PM US eastern time zone.

Azima DLI also provides a wide range of machine condition monitoring services, including data collection, vibration analysis, oil analysis, infrared thermography surveys, reciprocating engine/compressor analysis, motor testing, battery condition testing, and advanced onsite engineering services.

About Azima DLI

Azima DLI is the only global condition monitoring services company exclusively focused on delivering accurate and timely equipment diagnostics to industrial plants, transportation organizations and the military. Azima DLI's expert analysts, advanced software and flexible, Web-based delivery model provide customers with the information they need for insightful decision making that lowers maintenance costs and improves industrial reliability.

Knowing What's Ahead™



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