

Quantum Leap Innovations Software Deployed on the US Navy LCS2 fleet to Reduce Manpower Requirements.

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Press release from: [Quantum Leap Innovations](#)



Quantum Leap Innovations' AutoNet Express Condition Based Maintenance software has been deployed on US Navy LCS 2 Fleet. The software has been deployed on LCS 1 since early 2009 and is currently being integrated on LCS 2 as part of a condition-based maintenance solution for hull, mechanical, and electrical (HM&E) systems. Equipment being monitored includes propulsion diesels, diesel generators, gas turbines, reduction gears, water jets, medium pressure air compressors, and chilled water air conditioner plants (18 units in all).

AutoNet Express capabilities include condition monitoring services, machine health assessment, and continuous anomaly detection of dominant equipment dynamic failure modes via live sensor data. It supports allowing users to monitor and track changes to the operating conditions of critical components and systems, which means trends can be detected and analyzed before an incident occurs. Even when a machine is in a functional state, the system can provide insight as to where operation can be improved.

Why Use AutoNet Express?

Bayesian reasoning, the technology upon which AutoNet Express is built, has proven valuable for knowledge-based data mining applications, and is based on a causal (explanation based) modeling framework. Relationships between variables in a Bayesian network are defined probabilistically, meaning trends can be detected and analyzed over a continuous scale, rather than in the Boolean fashion used in traditional rule-based systems.

AutoNet Express is a collection of software tools for developing and running probabilistic reasoning applications using Bayesian Belief Networks. Real-time data sources are integrated with these networks to predict or assess likely outcomes based on sensor measurements.

AutoNet Express helps enable early warning and failure diagnoses from equipment to fleet level, and is important in helping the Navy:

- Achieve reductions in manpower levels aboard LCS vessels
- Ascertain real-time knowledge vs. average lifetime of assets
- Provide a foundation for mission-readiness analysis
- Scale equipment monitoring systems from a single pump to entire systems

AutoNet Express has been incorporated into The DEI Group's asset management software solution. It is now deployed and in use by the US Navy to relate live sensor data to machine health. Furthermore, AutoNet Express has been licensed for several commercial deployments across the United States in a variety of industrial environments and applications.

Quantum Leap Innovations was awarded US Patent #7,720,779 for this innovative work on May 18, 2010.

Quantum Leap Innovations, Inc. is the developer of the AutoNet Express and the LeapWorks® Pattern Based Analytics family of products which includes Pattern Based Discovery, Pattern Based Prediction, and Pattern Based Reasoning. The company also has technology and engagements in the areas of Adaptive Optimization® and Agent-Based Simulation.

Quantum Leap is located in the Delaware Technology Park which is affiliated with the University of Delaware and is located in Newark, Delaware. For more information or to set up an interview with one of the company's officers, please contact Jennifer Samero at 302-894-8010 or jms@quantumleapinnovations.com

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