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FREE WEBCAST!

Wednesday, December 13, 2006 9:30-11:30am PST

Advanced Tools for Enhancing Building Performance:

How to Use Currently Available Fault Detection and Diagnostics Tools in Commissioning

The California Commissioning Collaborative and New Buildings Institute invites commissioning providers, building owners, and others interested in commissioning and building performance to attend this free seminar on fault detection and diagnostic tools (FDD) currently available in the building controls market.

You'll learn answers to these questions:

- ▶ How can FDD be used as a part of a commissioning process?
- ▶ What kind of specific problems do these tools solve?
- ▶ What are their direct/indirect benefits and costs, and how are they best conveyed to a potential customer or decision-maker?
- ▶ What is the market for these products, and how can a provider determine if a particular building is a good candidate?
- ▶ What is the next step for commissioning providers interested in using FDD tools in their businesses?

As examples of products available in the marketplace now, the seminar will introduce the following tools:

- ▶ AHU and VAV Box Diagnostics Tools, available in several building control system application codes (based upon public-domain algorithms developed by NIST – the National Institute for Standards and Technology)
- ▶ Enforma Building Diagnostics, an automated fault detection system developed by Architectural Energy Corporation

A panel of presenters represent a variety of perspectives, including owner/facility manager, commissioning provider, and tool developer:

Mark Levi, General Services Administration Region 9

Jeff Schein, National Institute for Standards and Technology

Don Frey and Stuart Waterbury, Architectural Energy Corporation

Jonathan Soper, Enovity LLC

Jeff Strickland, Western Building Services

For more information, please review the following links:

- ▶ [Enforma Brochure](#)
- ▶ [FDD Case Study](#)
- ▶ [Article: Fault Detection & Diagnostics For AHUs and VAV Boxes](#)



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Why FDD?

The increasing complexity of building systems in both new and existing commercial buildings, along with the increased competitiveness in the construction industry tends to lead to buildings that were not designed optimally, were not constructed correctly, were never tuned, were turned over too quickly, and cannot be optimally maintained or operated by a facilities staff that is overwhelmed with day-to-day O&M. Automation systems, which should be a part of the solution to this problem, are often victims of the same forces that are causing building deficiencies. Sensors that are incorrectly selected, inappropriately located and not connected properly cannot be used to detect system problems. Alarms put on sensor values are useless if they are tripped so frequently that they are disabled.

One of the answers to these problems is to install high-quality monitoring equipment, and to apply advanced algorithms to compare measured with "proper" performance, detecting both existing and impending problems. This is known as automated fault detection and diagnostics (FDD). FDD has been a promising solution on the horizon for some time, but to date has not been widely available in tools appropriate to the industry. This is due to the cost of the technology, the cost of sensors and monitoring equipment, and the limitations on bandwidth and processing power needed to collect and analyze the large quantities of data required.

One by one, these barriers have been removed, and tools are currently emerging to provide useful, cost-effective fault detection and diagnostics. When embedded in the fundamental architecture and functionality of control systems, FDD is a powerful tool that provides onsite and remote support for performance optimization services for building operators as well as commissioning and operations/maintenance providers. A number of diagnostic tools are currently available in the market, with a range of functionality, performance, and cost characteristics, as well as use and maintenance requirements.



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