

Maastricht, February 14, 2011

**Announcement & Invitation**

Dear Sir/Madam,

The Department of Knowledge Engineering of Maastricht University has the pleasure to invite you to our colloquium '**Fleet Intelligence: Industrial Asset Management meets Machine Learning**'.

The presenters of this colloquium will be Frank Kirschnik, Ph.D., CEO at Cassantec Ltd. and Katerina Stamou, M.Sc., Solution Architect at Cassantec Ltd.

Attached you find an abstract of the presentation and some background information.

The colloquium takes place on **March 17 from 16.00-17.00 h** at Maastricht University, location Bouillonstraat 8-10, room 0.015 (ground floor).

Please be so kind to let us know if you are attending by emailing Claudine Jeurissen at [claudine.jeurissen@maastrichtuniversity.nl](mailto:claudine.jeurissen@maastrichtuniversity.nl).

If you have any questions do not hesitate to contact me.

Kindest regards,

*Prof. Dr. Gerhard Weiss*  
*Department Chair*

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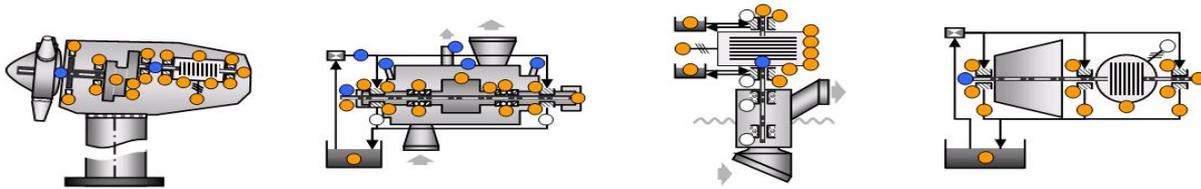
# Fleet Intelligence

## Industrial Asset Management meets Machine Learning

**Date:** Thursday, March 17, 2011  
16:00 – 17:00h

**Location:** Maastricht University  
Department of Knowledge Engineering  
Bouillonstraat 8-10, Room 0.015

**Presenters:** Frank Kirschnick, Ph.D., CEO, Cassantec Ltd.  
Katerina Stamou, M.Sc., Solution Architect, Cassantec Ltd.



**Abstract:** Operation of mission-critical industrial assets, such as turbines, generators, transformers, pumps, compressors, oscillators or pulverizers, is a challenging task. Commercial objectives of operators are jeopardized by the risk and costs of *downtime* and *lost output*, in a trade-off with *preventive maintenance* and *insurance* costs. To ensure safe and reliable operation of assets in the power and processing industries, operators rely on *condition monitoring* and *diagnostic techniques*. These techniques are primarily based on recorded asset condition and process data, such as vibration, lubricant, thermal, acoustic, ultrasonic, electrical, pressure, flow or speed parameters. With this data, diagnostic techniques allow inferring and reporting malfunction *before* failure and damage occurs. This may significantly reduce the risk and costs of unscheduled downtime.

Typically, the *earlier* a malfunction warning is given, the *higher* the benefits for the asset operator. In many circumstances, the *prognostic horizon* of condition data is key to commercially optimal asset management. Yet, malfunction prognostics require more disciplined condition and process *data management*, more sophisticated *stochastic modelling* and more *computational intelligence* than pure diagnostics. So far, most “predictive diagnostic” approaches ask for operator gut feel rather than considering the full prognostic horizon of the available data histories, often archived over several years.

We present a new approach to *intelligent malfunction prognostics*, utilizing the prognostic horizon of the available data histories and exploiting complementary operator experience and manufacturer know-how. Based on a novel combination of best practice techniques from Operations Research, Artificial Intelligence and Data Mining, we show how to drive a *fleet-wide automated, distributed learning process* allowing detection and prevention of mechanical and electrical malfunctions earlier and with higher accuracy than traditional condition monitoring and diagnostic systems did.

The presentation will be supported by an online demo of recent practice applications in the power industries.

**Background:** [www.cassantec.com](http://www.cassantec.com), [www.siks.nl](http://www.siks.nl)