MindSet Tools

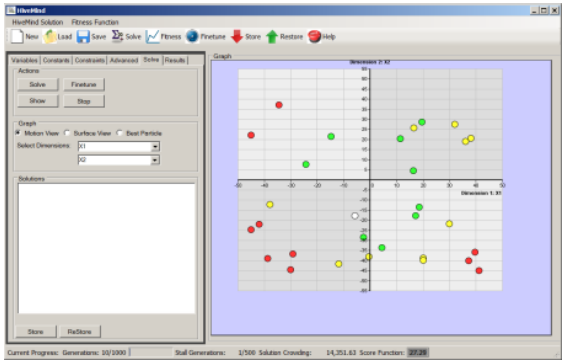
Optimization, Numerical Prediction
and Event Detection Toolset.

Process control and engineering methods are not "out of the box" solutions. They have to be fine-tuned for each procedure and scenario. In other words, an optimal solution has to be found, in order to maximize production, decrease costs and assure quality of products produced.

The MindSet Optimization Toolbox is the way to find that optimal solution. The MindSet Toolbox consists of tools which can be used to fine tune different kinds of procedures: parameter calibration, numerical Prediction, knowledge based process control and event detection are just some of the problems MindSet can solve for you.

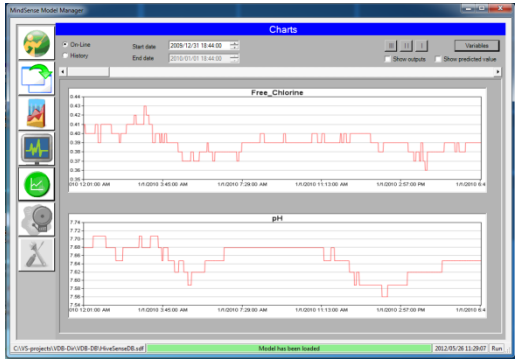
HiveMind

HiveMind is a simple and small optimization component, allowing you to find an optimal solution for a multivariable mathematical model, when given multiple constraints. Optimization problems can be quickly saved and loaded from file, allowing quick parameter calibrations and optimizations of knowledge based mathematical models.



CalcMind

CalcMind is a knowledge based component, which learns from a database the behavior of a given system (either physical, statistical or process) and is able to perform numerical predictions regarding the output of the system or the effects of the control variables. The system learns how different variables affect the processes involved. The component is designed to be able to answer questions such as: “Given these parameters, what will be the production Capacity? If I limit the power usage, how will the production capacity change?" etc.



Decision Makers Ltd.

Visit us as www.mindset-tools.com

SenseMind

SenseMind is an innovative product, which learns the behavior and activity of a given system and warns the user when irregular events occur. The component uses advanced statistical models, prediction and noise based alerting, 'rare combination' identification but can also include user defined set of rules. SenseMind is able to receive data from numerous sensors via database in real time, and answer the crucial question: "is there an irregular activity in the system?"

PathMind

PathMind is a knowledge based component, also learning from database the behavior of a given system. The component is capable of finding the optimal path (defined by the control variables) between two system states, under a set of constraints. Such a problem could be: "How to start the turbine, from 0 to x RPM, while not increasing pressure rate of change more than y degrees per minute, and minimizing the time needed to do so?"

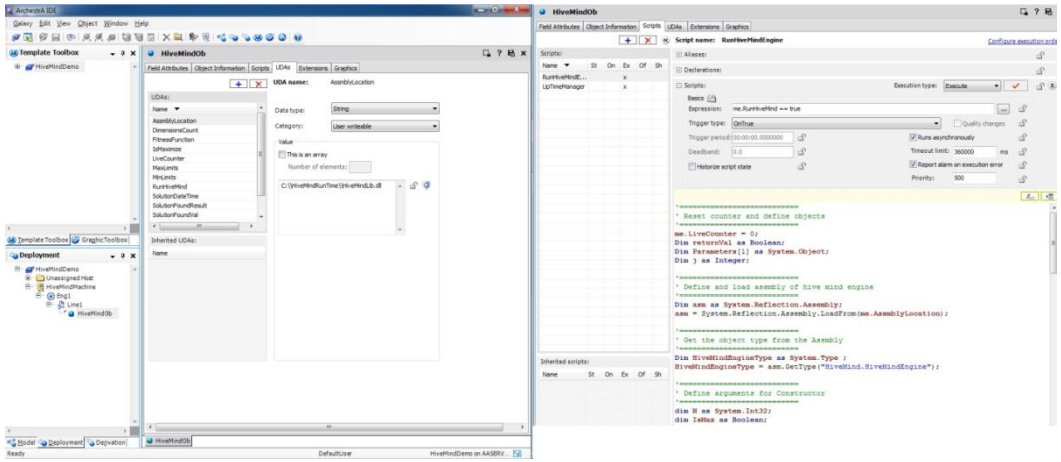
Easy to implement

MindSet Components can be implemented with a few lines of code – MindSet Tools do not require changes in current software architecture or knowledge in optimization algorithms. The entire optimization procedure can be activated with only a few lines of code. The engine is packaged as a DLL component, allowing it to be easily deployed in various systems.

MindSet models may be saved as files and re-run at a later stage with minimal additional requirements for definition.

Connectivity to other platforms

MindSet Components can be connected to .Net applications, MS-SQL or industrial SCADA software. With it, you can perform quick and reliable optimizations. Perform optimizations using database knowledge, or by calling on external calculations.



Above: HiveMind Optimization Component imbued as an ArchestrA object. MindSet Tools can be used from within industrial SCADA software, and have been tested on Windows 7 Embedded systems.