



Condition Assessments

Add the benefits of a full team of maintenance specialists

Feature Summary

- Analyzes data from multiple disciplines simultaneously—allowing more than one monitoring methodology to be used to confirm the diagnosis of the machine's condition.
- Automatically triggers work orders and/or generates reports based on the diagnostic condition assessment results.
- Automates repetitive tasks and reduces manual effort involved in output generation using the diagnostic customizable rule based system.

Benefits

1. Increase speed and accuracy.
2. Consistently apply the data analysis process every time.
3. Increased throughput by focusing on machines operating abnormally.
4. Helps train people and validates internal judgments.
5. Provides the the benefits of other machine monitoring technologies without the need to be an expert.

The **MAINTelligence Condition Assessment Module** is like adding in a full team of maintenance and reliability specialists as the system reviews and analyzes large amounts of machinery vibration, lubrication and inspection data, using a series of high performance diagnostic modules.

MAINTelligence keeps you informed of the condition of your plant's machinery in plain language, so you can make informed decisions concerning maintenance and operations. The Condition Assessment module uses a powerful expert system engine in combination with a set of pre-populated knowledge bases, covering many common vibration and oil analysis conditions.

The Condition Assessment module can analyze data from multiple disciplines simultaneously—allowing more than one monitoring methodology to be used to confirm the diagnosis of the machine's condition. The analysis generated is stored as a Condition Assessment result, which can then be used to generate reports or trigger work orders in MAINTelligence.

MAINTelligence's asset manager module provides advanced scheduling capability that allows assessment results to trigger work orders. Using the asset manager together with diagnostic results gives you a unique system—a completely integrated CMMS and PdM system.

MAINTelligence Condition Assessment Module

How does the Condition Assessment Module Work?

The Condition Assessment module is a diagnostic expert system. A diagnostic expert system uses rules and an inference engine, along with collected data, to calculate the condition of a subject, such as a machine or medical patient.

The components of MAINTelligence's diagnostic expert system are shown in the diagram on the right.

- **Machine Model** - all the relevant information about a machine (type of bearings, sump size, number of gear teeth).
- **Symptom Set** - the raw data collected from the machine after it is filtered through exception or alarm levels.
- **Rule Set(s)** - the rules of logic that an expert uses to compare machine model information to symptoms and determine machine condition.

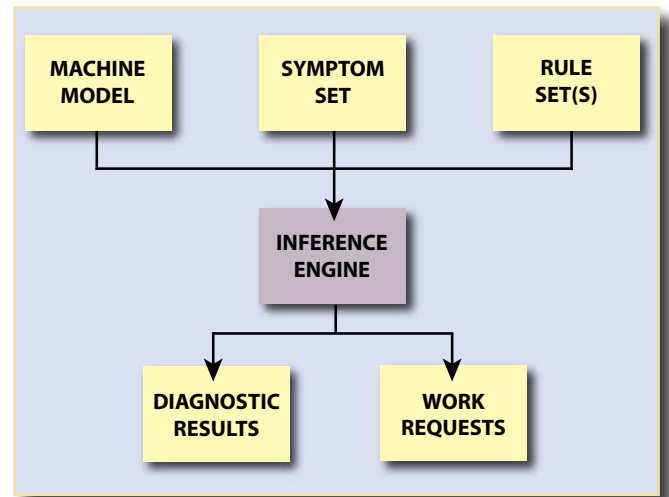
The machine model, rules and symptoms are processed the MAINTelligence inference engine, which has been custom designed to quickly analyze the large data sets generated by a condition monitoring or inspection program.

MAINTelligence Rule Editor

One of the key features of the MAINTelligence Diagnostic System is the Rule Editor. It allows the Rule Set(s) to be customized to suit the plant-specific knowledge. The inclusion of the Rule Editor makes MAINTelligence into the first machinery diagnostic system that the end user can completely customize to their own needs.

The user can add plant-specific knowledge to the system—effectively capturing and retaining the precious knowledge of your plant's operation. Rules are grouped into "rule sets". The user has full control over which rules are included or excluded in an inference by simply enabling or disabling these sets within the hierarchy. All rules can be linked to one or more diagnostics. The inference engine can use all text and other information attached to the rule when generating justifications for diagnostics.

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