

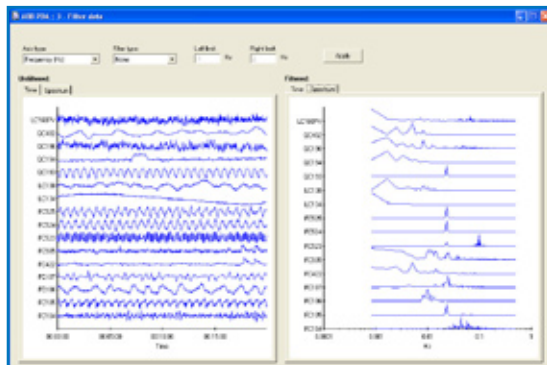
## cpmPlus Loop Performance Manager (LPM) Plant-wide Disturbance Analysis Extension



The ABB Loop Performance Manager Tool offers state-of-the-art controller tuning and monitoring.

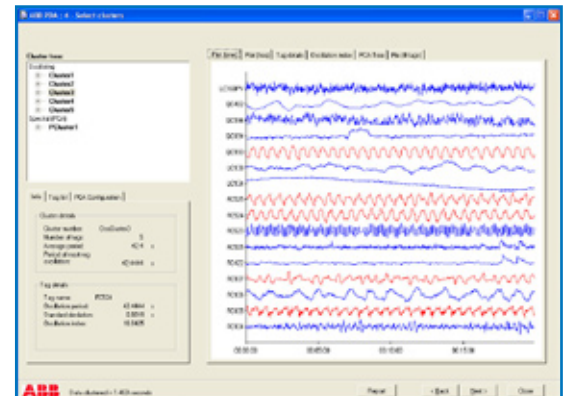
As a new extension, the tool now offers an application for process experts for Plant-wide Disturbance Analysis

(PDA). PDA gives the possibility to analyze batches of data of any size and automatically classifies tags that share common disturbance patterns (periodic and general disturbances).



Plant-wide disturbances can cause significant problems in modern production facilities where energy and material recycles contribute to the propagation of disturbances throughout the whole plant. The localization of root causes for such behaviour is no simple task. Usually, time consuming data and plant topology analysis has to be done in order to guide maintenance activities to remove the problem cause.

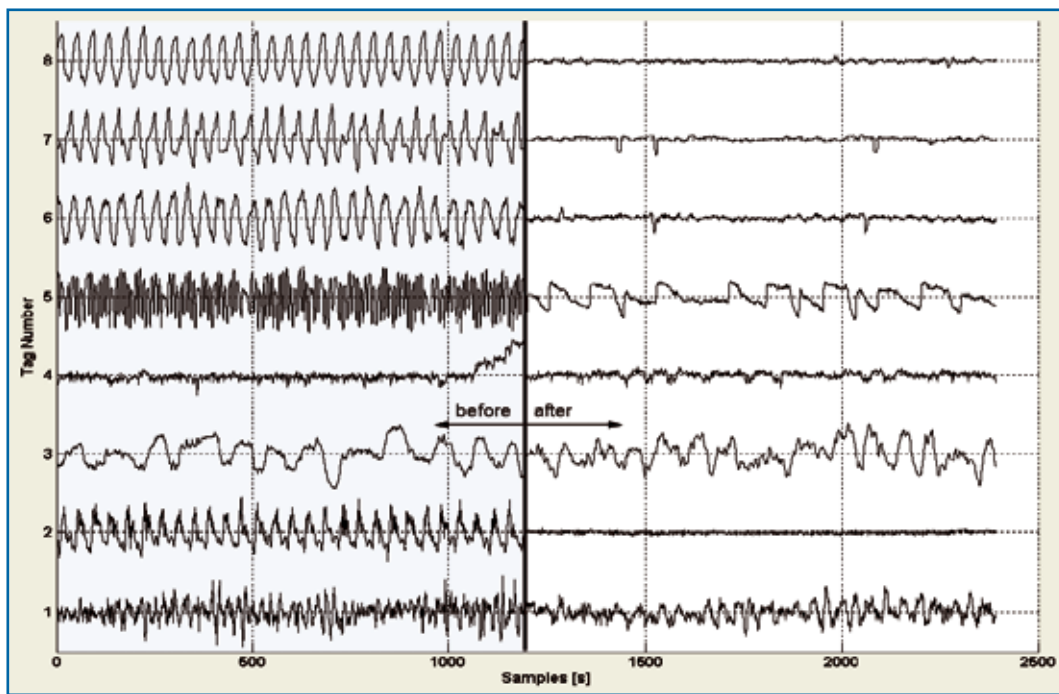
The new PDA module in ABB's Loop Performance Manager software enables the process expert to quickly analyze plant-wide problems in his facility.



A simple offline data batch with some hundred samples is sufficient to use the world-class algorithms in the software.

Data validity tests and pre-processing are performed automatically and based on default settings. Experienced users have access to the underlying tools in order to optimize the data analysis.

The data is automatically divided into relevant disturbance classes, i.e. groups of plant tags that share common disturbance patterns. This information gives the user important information about plant-wide problems. Since any number of tags may be processed, this tool



Performance improvement after PDA Analysis and succeeding corrective action

#### PDA Features

- Automatic test on data validity
- Automatic data pre-processing
- High-density data plotting
- Automatic disturbance classification
- Automatic root-cause analysis
- Various possibilities to analyse results

helps to analyze even data from large facilities where it is difficult to have a comprehensive overview of all measurement tags.

For significant disturbance classes, the tool automatically points out such measurement tags that are located closest to the potential root-cause of the selected disturbance family.

Such an analysis cannot be performed by hand and is based on state-of-the-art signal processing and information theory methods.

Collaboration with world-leading university researcher has enabled ABB to offer such technology exclusively in a professional commercial implementation.

The connection of PDA with the Loop Performance Manager Tuning and Loop Auditing functionality conveniently combines top-down root-cause analysis with bottom-up control loop optimization functionality.

Extensive field tests have proven the strengths and benefits of the methodology.



#### Collaborative Production Management

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