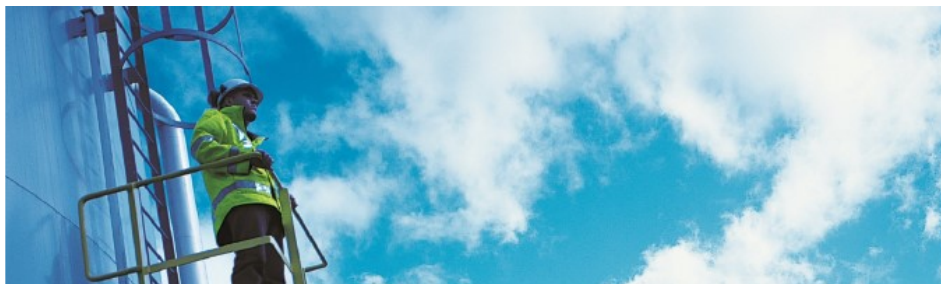


## Application Note



# Is Downtime your silent production killer?

## Are unplanned stoppages and slowdowns disrupting plant operations?

Unplanned production stoppages can have an enormous impact on production efficiency and the profitability of process plants. Analyzing lost production is often undertaken manually, with limited results, open to inaccuracy and error prone. It is difficult to identify the production impact and the effects on plant availability including scheduled and unscheduled downtime, reasons for downtime, common equipment failures, performance comparisons and maintenance priorities.

## What can be done?

Yokogawa has developed an automated software solution that captures downtime and rate loss information for an improved understanding of the issues that can impact plant availability.

This monitoring tool captures downtime events and enables operators to add additional information and associated reasons. It enables a deeper understanding of problematic areas to target the root causes of downtime when compared to a manual process. By having access to all associated information relating to a downtime event or rate loss, areas for improvements can be analyzed and evaluated to help reduce production losses in the future.

Reports are generated that reveal the issues that are having the greatest impact on production in terms of the causes or reasons for stoppages, and common equipment failures in the plant. Once this information has been examined, it supports management decisions regarding improvement actions that are based on real data, to reduce plant production losses and improve efficiency.

## What do you get out of this?

An automated software solution for analyzing downtime provides an enhanced visibility of the issues that affect plant availability and production loss. It is a cost-effective method of tracking production stoppages and improves the analysis capability to better understand the most important causes of unplanned stoppages and production slowdowns.



It can increase plant efficiency by isolating production underperformance, and putting actions in place to maximize production equipment which can be measured over time. It forms part of a continuous improvement program to improve operational efficiency and increase overall productivity.

## The information you need to know

For process plants, downtime is one of the biggest causes of lost production. The process industries have to manage high levels of equipment downtime which can result in increased costs, reduced productivity, and squeezed profit margins. Plant managers need information to help guide their decisions and to implement best practices. By analyzing downtime, it can expose the underlying issues that affect plant availability and rate loss.

Often, short regular incidents are overlooked and it is the large unusual events that attract the most attention when investigating downtime occurrences. However, these large incidents occur infrequently, and the shorter and more regular disruptions can accumulate over time and are difficult to track manually. An automated tool is an excellent way to capture these smaller and more frequent incidents that stores this information in a single location. Without such a tool, recording and logging this information manually is problematic, time consuming and error prone.

Having all the relevant information in a single location, allows plant management to make informed decisions quickly and take corrective actions. Once these actions have been implemented, the results can be benchmarked and compared against previous performance, for improved understanding with quantifiable results.

Effective analysis of downtime assists plant management to mitigate or eradicate causes of downtime and share best practices to reduce potential downtime. This is important for any continuous improvement program such as Six Sigma, as it provides clarity on where production is being lost, and where operational changes are needed to increase availability. It forms an important part of plant operations management and provides information that relates to Overall Equipment Effectiveness (OEE).

### Why use an automated tool?

Manual analysis appears in-expensive and easy to implement, but it provides limited results. It is susceptible to human error including no classification of downtime and no contextual information. "Stealth IT" solutions such as spreadsheets or databases are flexible, low cost options that require knowledge of what production data needs to be tracked and monitored. However, it is difficult to maintain a consistent standard over time and the information may not be available in a timely manner for fast corrective actions to be implemented.

An automated tool utilizes software to collect data and provides this information to the company's ERP system. An ERP only collects consolidated data and does not have the capability to produce detailed reports, making it impossible to perform detailed analysis and implement corrective actions.

To perform effective analysis of downtime, a dedicated software tool that provides useful and detailed downtime and rate loss information, accompanied by manual input provides an integrated solution. Using dedicated software to collect data and measure the actual output against the expected output enables the identification and quantification of downtime, and helps improve lost production capacity. Analyzing the results and implementing corrective actions can save money through optimized operation and prioritized maintenance to increase production.

### Key Takeaways

#### Dedicated Software Tool

Planned production is often compromised by unplanned downtime incidents and sub-optimal production rates. Based on the need to log and track unplanned equipment downtime, a dedicated downtime analysis software tool automatically captures plant data and enables additional information to be added by operators that enables better analysis of root causes of downtime and rate loss.

#### Effective Downtime Analysis

Without this level of detailed information, there is no easy way to consistently and accurately identify common equipment failures, and determine which area has the greatest effect on downtime. It focusses attention on the production areas and processes that need attention, to help avoid future lost production. It can help prioritize maintenance schedules and supports a continuous plant availability improvement program.



### References

Exaquantum Down Time Analysis  
(Exaquantum/DTA)

### Source Information

For more information, please contact  
[sales@ymx.yokogawa.com](mailto:sales@ymx.yokogawa.com)

All sales materials and information are available on the PESN site at  
<http://globalcyber.jp.ykgw.net/pesn/index.htm>