

# Procedure Analysis for SOP Optimization

**Identify the best operating practice from data and machine learning technology to achieve consistent and efficient operating performance in manual operation.**

## Challenge & Solution

While Standard Operating Procedures (SOPs) guide the operators through manual operations and standardize the processes, paper-based SOPs are occasionally outdated, not updated, and do not reflect the current most efficient way to drive the process.

### Relying on implicit knowledge of experienced operators results in:

- Operating performance may vary from one operator to another, directly affecting production efficiency.
- Onboarding of new operators is difficult and requires great effort.
- The safety of operations may be impacted.

### "Procedure Analysis for SOP Optimization" provides an innovative solution to:

- Visualize and analyze actual operation procedures utilizing DCS data with machine learning.
- Identify the best operating practice for optimal SOP.

## Value & Overview

Delivering consistent and efficient operating performance is the key to achieving operational excellence and process safety. The "Procedure Analysis for SOP Optimization" solution will deliver the following benefits to manufacturers with manual operation procedures such as batch production and plant start-up/shutdown:



**Identify reasons behind variations in operational performance.**

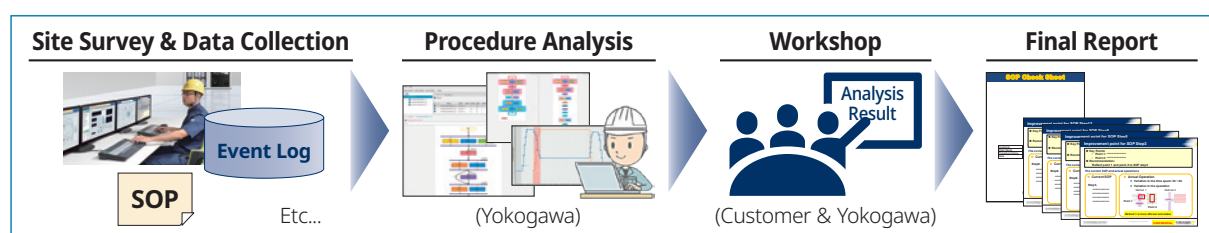


**Reveal the "golden" SOP from data.**



**Retain and inherit operators' experience.**

By utilizing DCS data collected from the plant, Yokogawa will analyze the actual operating procedures. Then, on-site workshops will be held with the customer to discuss the analysis result and conclude the best operating procedures.

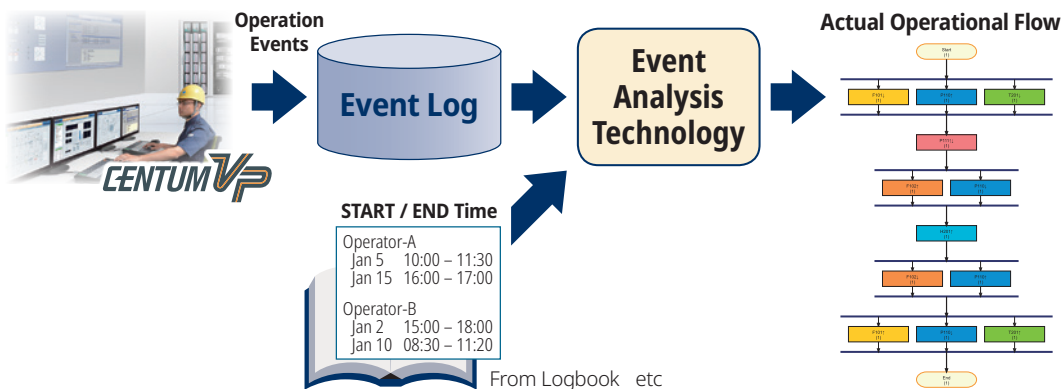


\*SOP: Standard Operating Procedure

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## Technology: Operational Procedure Extraction from DCS log data

Yokogawa's unique machine learning technology extracts and visualizes actual operating procedures from the DCS event log data automatically.

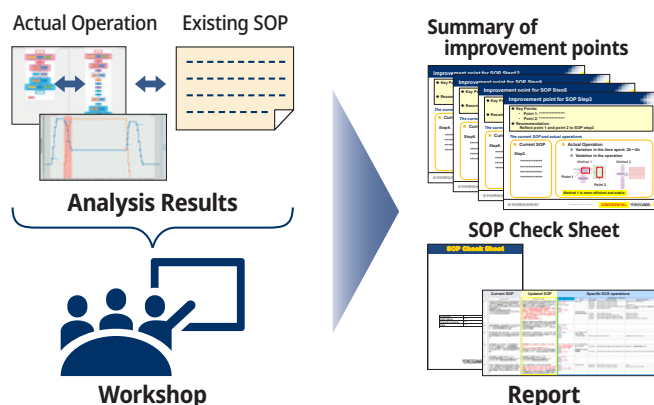


## Deliverables: Workshop & Report

Yokogawa will clarify the gaps between the actual operation and existing SOP, and differences in specific operation by various operators.

Based on the analysis result, the customer and Yokogawa will identify the best operating practice and SOP improvement points in the workshop.

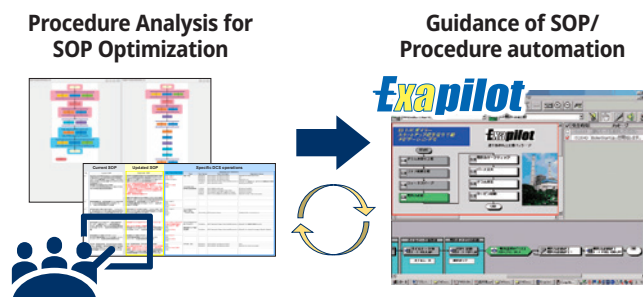
The final report will include a summary of the improvement points and SOP check sheet to update the existing SOP.



## Further Solution: Digitalized SOP in Exapilot

Yokogawa recommends embedding the updated SOP into Exapilot, Yokogawa's Operation Efficiency Improvement Package.

Exapilot is an online navigation tool that guides operators step by step through carrying out the operating procedures. Manual operations can also be automated by Exapilot to reduce the operator's workload. Furthermore, Yokogawa recommends annual "re-analysis" to optimize the SOP in Exapilot aiming for automation of manual operations.



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