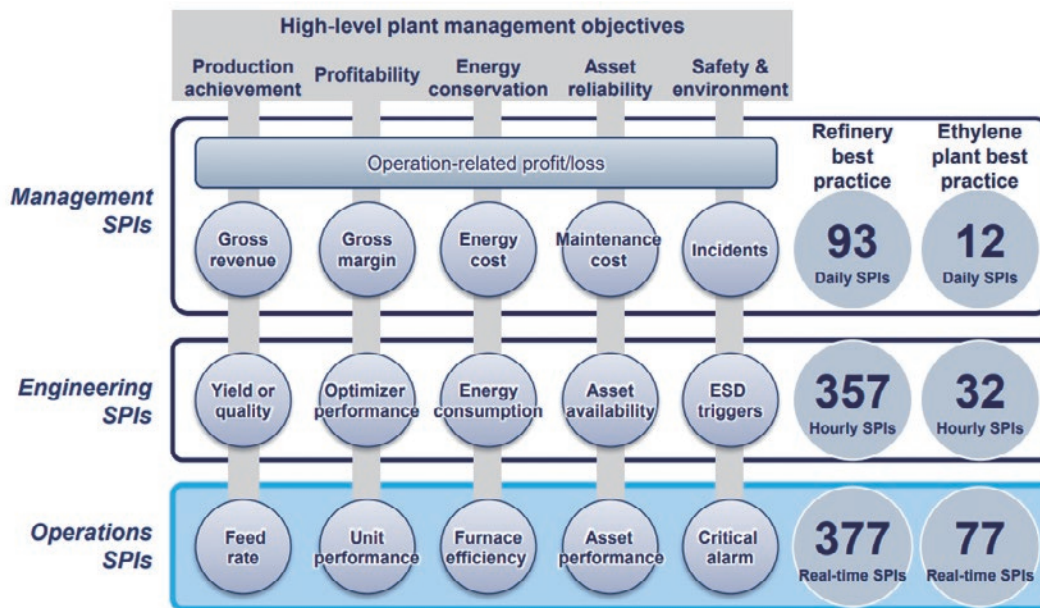


OpreX Profit-driven Operation Solution to Enable Integrated Plant Performance Management - Comprising proprietary metrics methodology for cross-organizational alignment with high-level objectives -

Performance Metrics Methodology

This unique solution has been made possible by integrating Yokogawa’s expertise in industrial automation technologies with the extensive domain knowledge of experts at KBC, which has decades of global analysis and consulting experience with major energy and chemical plants. Yokogawa collaborated closely with KBC industry consultants to first define and then systematically structure several hundred metrics, which Yokogawa calls “synaptic performance indicators” (SPIs), that are collected at the plant operations, engineering, and top management levels in refinery operations, based on deep knowledge of how they affect plant performance.



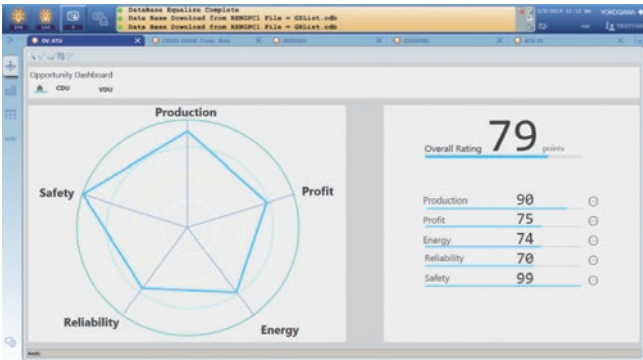
Conceptual framework of how top management, engineering, and operations SPIs are structured to align with high-level plant management objectives

New Performance Dashboard

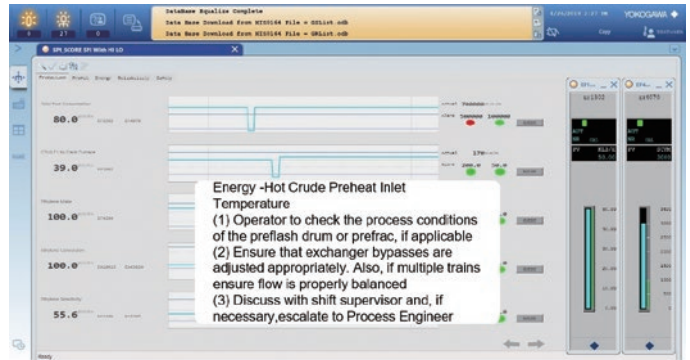
By integrating our new performance dashboard and related services into a CENTUM™ distributed control system*, we can increase the efficiency of plant operators monitoring in real time how their operation patterns are impacting high-level plant management objectives.

When this solution is implemented at a plant, optimal setpoint ranges are determined for each SPI. If an indicator moves outside the ideal range, built-in expert advice is displayed to support prompt action by junior and senior operators alike. SPIs and operator performance data are automatically collated for internal and industry benchmarking, root cause analysis, and expert consulting to realize continuous profitability gains.

Performance Dashboard for Operations



Automated Expert Advice on Specific Indicators



- Operators better understand their operation patterns
- Operators are motivated to improve operation
- Operators drill down on reasons of low score
- Managers analyze the balance of different objectives
- Managers identify improvement opportunities

- Senior operators can take agile action based on alert and expert advice
- Managers can benefit from of benchmarking, root cause analysis and expert consulting for continuous SPI improvement

* Requires CENTUM VP R6 or later



Synaptic Business Automation creates sustainable value by connecting everything in our customers' organization. To realize this, Yokogawa integrates its business and domain knowledge with digital automation technologies, and co-innovates with customers to drive their business process transformation.

Yokogawa Electric Corporation

World Headquarters

9-32, Nakacho 2-chome, Musashino-shi, Tokyo 180-8750, Japan

<http://www.yokogawa.com/>

Trademarks

All brand or product names of Yokogawa Electric Corporation in this bulletin are trademarks or registered trademarks of Yokogawa Electric Corporation. All other company brand or product names in this bulletin are trademarks or registered trademarks of their respective holders.

Subject to change without notice.

Copyright © 2018, Yokogawa Electric Corporation

[Ed:01/d] Printed in Japan, 806(KP)

Represented by :