

YOKOGAWA Solutions for OT/IT integration to SAP and ERP Systems

Integration of IT/OT is a key objective of Digital Transformation initiatives in Oil & Gas and other industries. Seamless data flow between Plant Information (OT) and Enterprise applications (IT), with cyber security measures in place, is crucial to enable decision making with the right information at the right time. While traditionally data collection for business activities are manually performed, reporting is time consuming and error prone, which can affect the decision-making process. As part of plant digitalization, that data exchange is rapidly being automated.

This information is intended to help operation and maintenance workers do their jobs more effectively.

In Plant OT environment, Data acquisition is standardized through OPC, for which several protocols are supported (DA, AE, HDA, Batch and recently UA). Additional support for non-OPC capable systems is provided utilizing OLEDB, ODBC, ASCII, XML, SOAP and Web APIs. This allows for integration of both Yokogawa and non-Yokogawa systems. Typical subsystem integration is provided for: Process Historians, Laboratory Information Systems, Asset Management systems, DCS, SCADA, PLC systems, and other Yokogawa systems.

Data Processing / Transformation - Collected data can be stored, forwarded

and transformed as necessary prior to onward communication. Typical functions include both standard aggregations and calculations. KPI's can also be provided based upon any available data within the Data Manager, typically Process, Quality and Financial data can be combined to provide online dynamic KPI's for both business and production use as required.

KPIs can be visualized in dashboards that enable at a glance awareness of the current situation. Dashboards also provide the ability to quickly identify and drill down to areas of concern and determine the root causes for issues.

For IT integration, Web Services component provides the necessary integration support in the business and production domains utilizing ISA-95 standards.

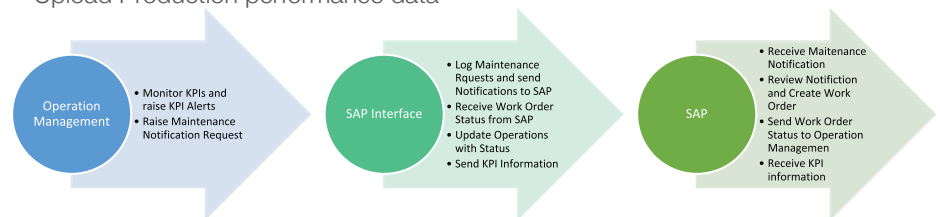
What Interface can do

- Handle EAM system request to process below functionalities.
- Maintenance notification
- Upload Work Order Request
- Upload Production performance data

- Upload equipment runtime data
- Historian / Spot Data
- Event information
- KPI
- Equipment Health status
- Frequency of request will be customizable in order to improve the performance of system
- Overall process activity and task will be in defined sequence and scalable.
- Error and fault exception will be handled and logged for easy reference and auditing purpose.

Key Features

- Easy to implement, manage and maintain
- Utilize industry standards where possible
- Provide flexibility and agility to meet ever changing business needs
- Clearly defined business process
- Understanding both current and future needs ensuring adequate account is taken of the inevitable changes required in the future
- Using standards reduces the risk of integration and lowers the associated costs.



This application can be utilized to Integrate Plant Historian, different 3rd party solution to COMPANY SAP system. It is part of digitalization movement and will be applicable to customers who are looking to further digitize their systems and bridge the gap between IT/OT.

For further information please contact infopsb@bh.yokogawa.com.

- Mohammed Ali

Yokogawa's Remote Maintenance Solutions

The COVID-19 pandemic is turning everything upside down. At such an uncertain and tumultuous time, we at Yokogawa Middle East and Africa remain steadfastly committed to your business and to support you every step of the way. From the very beginning of this crisis, our priority has been to safeguard the health

and well-being of our most valuable assets - our employees, our customers, suppliers and partners - while assuring the business continuity of our customers.

To facilitate this, we are pleased to offer secure remote maintenance solution which help in providing quality and timely support even though mobilization

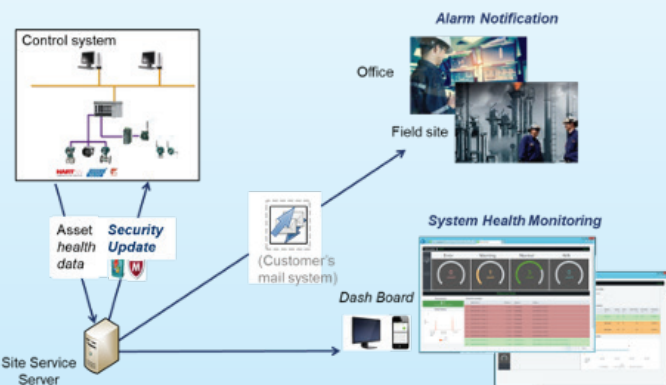
of engineers may be restricted. Yokogawa offers two variants of the remote maintenance service depending on whether an external connection is feasible. The on premise version caters to the maintenance needs of customer who cannot provide outside connectivity to internet.

On Premise Version (without internet option)

The on Premise version (without internet option) provides monitoring and management of system healthiness information of site PCS (Production Control System) for preventive and predictive maintenance, improving the overall asset effectiveness throughout the plant lifecycle. The Site Service Server for System Healthiness Monitoring Service provides an integrated framework to gather and browse system healthiness information of site PCS (Production Control System).

To execute System Healthiness Monitoring Service, Yokogawa installs Site Service Server at customer site which automatically collects information from the PCS and provides an easy to understand dashboard of healthiness status of the plant.

The collectable data vary depending on the device type. Site Service Server and/or Yokogawa Service Center System checks and analyze the collected data. If the data matches the configured conditions to detect any issue or signs of potential risk, the alarm is registered and raised on Dashboard information service tool. The alarm can be notified to 1st line alert reception desk by email from from Site Service Server if it can be reachable to SMTP at the customer site. Yokogawa experts verify alarm and diagnosis data if demanded, and response to it upon agreed Lifecycle Agreement contract. Evaluation report can be submitted with a proposal plan for effective maintenance.



VPS Remote – internet Option

VPSRemote provides a secure infrastructure for the next generation IIOT (Industrial Internet Of Things) enabled smart service especially in terms of people, information, security, systems and Asset for plant performance.

With the emergence of IIOT platforms and technologies, major opportunities have been identified to improve the asset performance and reduce downtime. The VPSRemote package powered by a secure remote infrastructure provides continuous and stable asset health monitoring and helps predict a maintenance rather than scheduling a preventive maintenance thereby reducing the downtime.



VPSRemote solution breaks the geographical and time zone barriers in integrating various assets and support infrastructures. It provides a secure external network communication environment created, maintained, and operated by Yokogawa.

VPSRemote services which is a part of the Yokogawa's Life Cycle Agreement portfolio, provides the following services

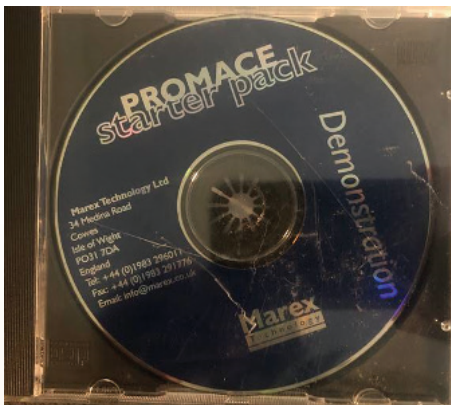
- ✓ Asset Health Monitoring Services / System Monitoring
- ✓ Plant Security Lifecycle Services / End point Security Update
- ✓ Basic Maintenance Services / Emergency Support
- ✓ Comparative Effectiveness Analysis: CEA

- Pradeep Gururaj

A LOOK BACK IN TIME !

Exaquantum – Plant Information Management System

It was in May 2000 that Yokogawa released its much-awaited Plant Information Management System (PIMS) solution, Exaquantum. The story of Exaquantum began back in the mid-1990s when an independent UK software company (Marex Technology Limited) based on the Isle of Wight was looking at developing a new version of their flagship product, PROMACE.



During those early days, the development of PROMACE Quantum was an ongoing project, it was during this period that Marex had formed a good relationship with Yokogawa. Yokogawa saw Marex to be a good acquisition to complement their business and in August 1997, Yokogawa purchased Marex, changing its name to Yokogawa Marex Technology Limited (YMX).

From 1997 onwards, the plan for a new version of PROMACE was replaced with a brand-new solution based on the Microsoft Windows platform started. The growth of the YMX R&D team grew exponentially in a very short space of time with development engineers from Japan and India taking up residence on the Isle of Wight during the development of the



first release. In early 2000, the Quantum product was branded as Exaquantum to complement Yokogawa's other EXA series range of products. After almost two years of development, Exaquantum R1.0 was released in May 2000, selling well to Yokogawa customers that needed a historian for the CENTUM CS and CENTUM CS/3000 systems.



When Exaquantum R1.0 was released, it required a system running Windows NT 4.0 server and the recommended RAM for the server was 512MB (Megabytes, not Gigabytes!) and supported a maximum of just 10,000 tags. Back in those days, it was just a historian, there was no web

server, no graphic conversion and other add-on solutions that are available today such as Alarm Management, Safety Management, and integration to ERP systems. One of the very first systems installed after R1.0 was released was in the Middle East in Dubai, United Arab Emirates. The system is still operational today.

Exaquantum R1.0 was just the start of things to come and in 20 years it has grown a large install base with over 3200 licenses sold and a comprehensive suite add-on solution now available. The latest release of Exaquantum (R3.20) is now supporting 64bit architecture allowing a maximum of 500,000 tags per server running on the latest Microsoft Windows OS. The Exaquantum Web server now provides a rich user experience for trending and graphics, whilst the greatly increased connectivity available for third party through OPC makes Exaquantum an excellent choice as a platform for Plant Information Management.

- Chris Bamber

SENCOM Smart Adapter, SA11



Yokogawa's has now incorporated the benefits of SMART sensor technology into their existing pH/ORP sensor and Converter products range. The test-to-death method that Yokogawa uses during the development of all their products has been taken to a further step.

The model SENCOM 4.0 Smart Adapter offers full measuring parameter functionality for analogue Yokogawa sensors equipped with Variopin connector and ID-chip. The re-usable Smart Adapter can be connected directly on top of the sensor or in case of very high process temperatures, through an extension cable.

Two kinds of measurements are offered, pH/ORP and Contact Conductivity.

The pH/ORP measurement is offered in two different modules, SA11-P1 for conventional type pH sensors and SA11-P2 for differential type pH sensors. The Contact Conductivity measurement has one module, the SA11-C1.

Variety of calculated data is selectable. Data can be accessed by a HOST system using reliable digital communication standard MODBUS protocol.

The SENCOM 4.0 Smart Adapter automatically recognizes the installed sensor and prepares the right configuration, thereby creating a plug and play solution which improves the operational excellence in customer application.

The SENCOM 4.0 Smart Adapter offers the best accuracy in measurement with temperature compensation functionality and calibration functionality. Online sensor diagnostics and sensor wellness (e.g. glass break detection for pH and polarization detection for Contact Conductivity) provides added reliability and the integrated logging of

events is useful information source facilitating optimized maintenance.

The SENCOM 4.0 Smart Adapter is designed for the wide range of industrial environments and is tested against the latest standards and detachable/re-usable with galvanically isolated electronics with all parameter specific hardware and software (e.g. calibration routine, predictive maintenance). SENCOM® VP module is not limited to PH, and will be prepared for pH, SC, ISC and DO. It is less expensive when compared with sensors with short lifetime (e.g. due to harsh applications). This Concept can work as standalone unit (e.g. direct connection to DCS). However configuration management of sensor and trigger for calibration of sensor is done by HOST.

SENCOM 4.0 Platform - Next Generation



- Prithviraj R. Rode

TRAINING SCHEDULE FOR JUNE 2020

COURSES	Bahrain	Saudi Arabia
	<ul style="list-style-type: none"> • Operation, Calibration & Maintenance of Field Instruments 	<ul style="list-style-type: none"> • Essentials of Process Measurements and Control

For latest training schedules and further information please visit <https://www.yokogawa.com/bh/support/customer-training/>



rcma@bh.yokogawa.com



+973-17358258
800-1166610 (Saudi Toll Free)
800-96564292 (UAE Toll Free)



<https://rcmeportal.bh.yokogawa.com>