



## President's Message

To keep you even better informed about the dynamic developments at Yokogawa Middle East, we are launching, with this issue, Rawabet, a biannual newsletter. Of course, we have our website ([www.yokogawa.com/bh](http://www.yokogawa.com/bh)), which is up to date, and also links to the Yokogawa headquarters website.

With Rawabet, we bring the news and developments to your desk, letting you read about us at your leisure. The landmark news of the first half of this year is, of course, the expansion of Yokogawa Middle East into Saudi Arabia.

Though active in Saudi Arabia for a score of years, this multi-million-dollar move will help dramatically support the Kingdom's booming oil, gas and petrochemical projects, contributing significantly to its development programme. Besides Yokogawa's own highly professional team, we will be training and developing Saudi nationals, providing technology transfer and procuring local materials.

In Rawabet, you will read about our latest technology in producing high-quality products and systems through research and development, presenting you with cutting edge 21st-century best-industry

practices, such as our Life Cycle Management services. Your newsletter will also provide information about new joint ventures, expansion into new industries as well as principal exhibitions, seminars and workshops in which Yokogawa Middle East will be participating.

Moreover, Rawabet will report on Yokogawa's contributions to the community as we have always felt a social responsibility for the place where we live and work. This is your newsletter, and we would welcome your own feedback [[feedback@ml.bh.yokogawa.com](mailto:feedback@ml.bh.yokogawa.com)] to make this communications medium a stronger link, a bond, between you and our company, working together to achieve the finest in quality technology for this region.

Yours sincerely,

**Akira Ogawa**  
President & CEO

- 02 Rapid Expansion into Saudi Arabia
- 03 Driving Innovation in Industrial Automation
- 04 VigilantPlant's Operational Excellence

- 05 Yokogawa Life Cycle Management
- 05 Become a Yokogawa Plus member
- 06 Yokogawa SCADA Solutions

- 06 Automation System Upgrade in Oil Refinery
- 07 Yokogawa Happenings
- 07 Yokogawa opens \$39m facility at Bedok
- 08 Soaring High

# Rapid Expansion into Saudi Arabia



YME-KSA new building perspective in Dhahran, Saudi Arabia

In a momentous move, Yokogawa Electric Corporation has established two companies in the Kingdom of Saudi Arabia. Yokogawa Saudi Arabia Company is engaged in engineering and the manufacturing of process-control solutions as well as research and development while Yokogawa Services Saudi Arabia Company provides after-sales and training services related to instrumentation and life-cycle maintenance services.

Representing a multi-million-dollar investment, Yokogawa Saudi Arabia

Company, started last December in Khobar, will be located on a 10,000-square-metre plot at the Science Park of King Fahd University of Petroleum and Minerals in Dhahran, Saudi Arabia. Future expansion of facilities calls for 18,000 m<sup>2</sup> with the built-up area going from 4,000 to 7,000 m<sup>2</sup>.

Yokogawa Services Saudi Arabia Company, on the other hand, is a joint venture of Yokogawa and Gas Arabian Services, a long-time partner of Yokogawa in Saudi Arabia. The new company began operations this July

and is located in the Support Industries Area in Jubail with 50 employees and a total land area of 5,000 m<sup>2</sup> and a built-up area starting at 2,000 m<sup>2</sup> but to be expanded to 3,000 m<sup>2</sup>.

Over 200 professionals will be employed by the companies, allowing Yokogawa to effectively support Saudi Arabia's booming mega-sized oil, gas and petrochemical projects and to contribute to the kingdom's development programme. Working with the country for 20 years, the company is spearheading a proactive Saudisation policy and both contributing to the Saudi economy and providing high-quality local services for the company's largest market in the Middle East.

Policy objectives include employment and development of Saudi nationals, a technology transfer and procurement of local materials. Moreover, Yokogawa provides high-quality local services including on-call services on a 24/7 basis, system engineering, integration, startup, commissioning work, modernising of process-control systems and customer training.

Akira Ogawa, as president and as well as CEO of Yokogawa Middle East, heads the two new companies. Yokogawa's existing branch office in Yanbu is set for expansion while the network will be extended to Jeddah and Riyadh.

Customer Voice



Mr. Abdallah Utaibi, PMP  
Project Engineer  
HGP Expansion Project Division  
Hawayyah Gas Plant

“Congratulations to Yokogawa Middle East (YME) on its inaugural newsletter. It's good to know of the news and events happening in the Company. This newsletter will help build on the relationship between Customers and YME. I wish YME all the success with their initiative. Mabrook!”

Yokogawa looks forward to hearing from all our customers! To voice your comments, please feel free to write to us at: [feedback@ml.bh.yokogawa.com](mailto:feedback@ml.bh.yokogawa.com)

# Driving Innovation in Industrial Automation

**Ubiquitous computing in plant floor**

- ✓ From anywhere
- ✓ At anytime autonomously
- ✓ Vividly as if on-site
- ✓ From user's viewpoint
- ✓ With agilely adapting to changes

**Field Ubiquitous Innovation**

- Sensors and control devices carry out continuous self-diagnosis and autonomously execute predictive maintenance
- Distributed plants are remotely operated from one operation center on the globe.
- Equipment and devices in the production line engage in autonomous dialog with human operators using email and other network tools.

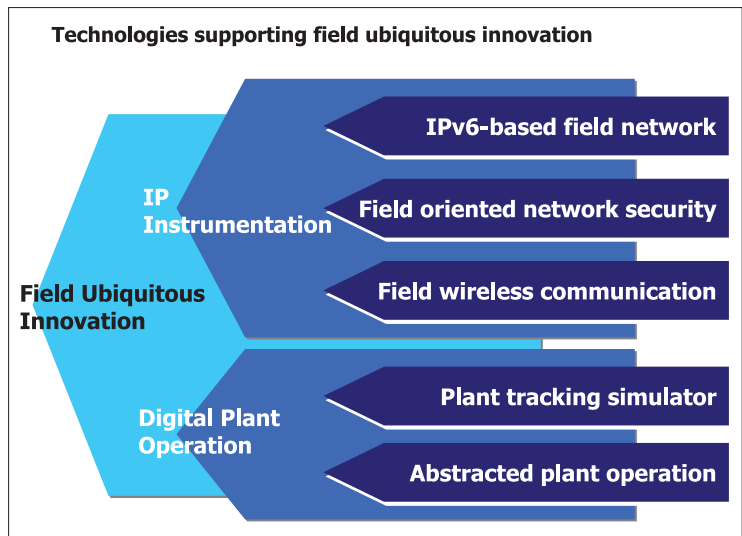


Mr. Toshiaki Shirai at KFUPM Dhahran, Saudi Arabia

Globalisation requires of us worldwide collaboration to unite local entities, creating global-scale values, underlined Toshiaki Shirai, senior vice-president and CTO, corporate research and development headquarters of Yokogawa Electric Corporation in Japan. He spelled out five key tasks to be solved by users and suppliers of industrial automation for the future in a workshop keynote presentation last May at King Fahd University of Petroleum and Minerals (KFUPM) in Dhahran, Saudi Arabia.

Top of the agenda in his presentation entitled "Driving Innovation for Future Industrial Automation" is to protect health, safety and the environment. "In the coming years, automation systems will be more focused on an additional responsibility to protect health, safety and the environment, ensuring security for stable production," he pointed out.

Flexibility and an agile adaptation to various market-demand changes are needed. "These days even in mass-production factories, plant managers are required to produce various types and grades of a product with frequent changes, in accordance with real-time order intake from customers," Mr. Shirai maintains.



Automation systems need to have better capability to handle production data more flexibly. "Another change found in manufacturing," he says, "is the emerging demand for tailor-made production where a very small lot of a product is produced for an individual customer order," and that he terms "personalisation of production."

A final factor in 21st-century automation is sustaining a certain "freshness" in automation systems over a longer period, and that's "an everlasting challenging task." Mr. Shirai notes that "automation systems should keep maintaining user assets, such as control and production

strategies, for many years while system components are adequately updated using latest techniques."

In his presentation, he deals with the concept of field-ubiquitous innovation, including Internet Protocol Instrumentation and Digital Plant Operation. The former includes IPv6-based field network, field oriented network security and field wireless communication. The latter includes Plant tracking simulator and Abstracted plant operation. If you would like a copy of the full text and PowerPoint presentation, please e-mail: [feedback@ml.bh.yokogawa.com](mailto:feedback@ml.bh.yokogawa.com)

# VigilantPlant's Operational Excellence

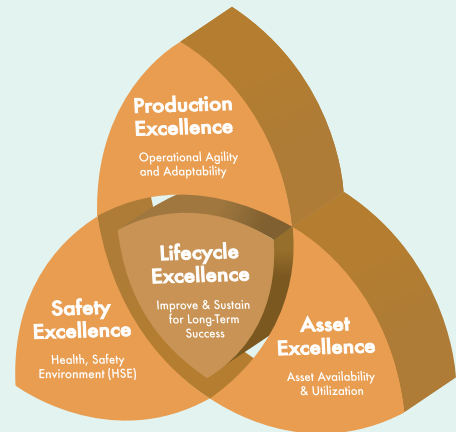
By  
Hussein Zein

## Executive Overview

Process plants today need to secure greater asset utilization to meet the demands in terms of productivity & quality, while enabling flexible production to supply richer product mix in a profitable and demand-chain oriented manner. Choosing the right technology and the right partner to achieve these objectives is another challenge in itself.

Yokogawa's vision with VigilantPlant is to create an environment where plant personnel and operators are well informed, alert, and ready to take action. The three Primary Components of SEE, KNOW & ACT in VigilantPlant represent Visibility, Predictability and Action, which leads to Operational Excellence(OpX).

The core building blocks of the VigilantPlant solution fit well into the model of Operational Excellence that consists of a continuous improvement cycle of measurement, control, and optimisation. VigilantPlant's Operational Excellence (OpX) was developed based on its offerings that allow users to place Yokogawa's capabilities in context with a real economic value proposition and business goal rather than simply evaluating features and functionality. The model is based on three primary facets –



Asset Excellence, Production Excellence, and Safety Excellence.

### a) VigilantPlant Path to Asset Excellence

The Asset Excellence portfolio focuses on asset availability and utilisation, because visibility into asset information is vital, knowledge of impending abnormal conditions or mechanical failure is imperative, and most important is the ability to take corrective action. The Asset Excellence portfolio consists of offering such as Plant Resource Manager (PRM), FieldMate, and Foundation fieldbus solutions.

### b) VigilantPlant Path to Production Excellence

Yokogawa has a wide range of production management and MES solutions ranging from Plant Information Management Systems (PIMS) and Advanced Process Control (APC) to Advanced Operator Assistance (AOA) Solutions.

The Production Excellence offerings focus on operational agility and adaptability, and include Yokogawa's suite of Exa production management offerings and related services, as well as Yokogawa's core system offerings under CENTUM CS 3000 and STARDOM.

### c) VigilantPlant Path to Safety Excellence

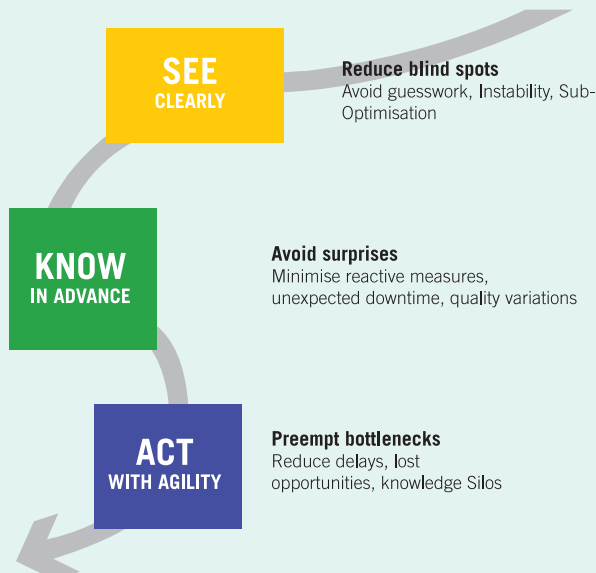
A significant component in the VigilantPlant scope of offerings is Yokogawa's new approach to safety systems and safety instrumented systems (SISs). Yokogawa's new approach to safety systems addresses the company's belief that safety systems still lack much of the advanced functionality found in DCSs, such as a unified architecture, integrated HMI, and integrated alarming capabilities, all of which provide the business value proposition of reduced unplanned downtime, lowered total cost of ownership, and increased return on assets.

The Safety Excellence portion was launched with the introduction of the ProSafe-RS safety system, AAASuite alarm management offering, and other aspects of the company's safety strategy.

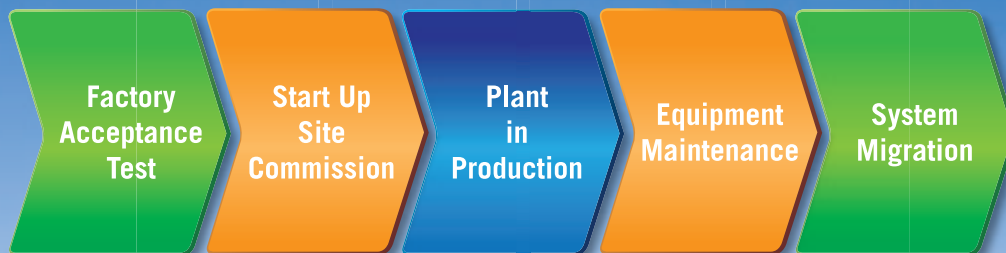
With the Vigilance and VigilantPlant strategies firmly in place, Yokogawa has expanded its mission even further. At the company's 90th anniversary celebration in Tokyo in October of 2005, Yokogawa CEO Mr. Isao Uchida reiterated the message of the company to become the number one global supplier to the automation marketplace by 2010.

In summary, Yokogawa's Strategy with VigilantPlant is to Partner with Customers by Driving Profitable Growth through Operational Excellence.

## VigilantPlant value propositions



# Yokogawa Life Cycle Management By R. Sukumara



To maximise the results you can expect from automation, control, instrumentation and information technologies, Yokogawa Life Cycle Management (LCM) offers a full portfolio of valuable services to help you remain competitive in the marketplace. LCM packages these services into a single support agreement, ensuring you achieve your asset-management goals by improving the value and extending the life of your installed equipment.

LCM creates industry-support services uniquely designed to suit your requirements, supported by an extensive network of field-proven management and operational resources. The management program supports your long-term strategy right from the stage of a factory-acceptance test and startup and commissioning to plant in production, equipment maintenance and system migration.

The prime advantages to LCM are:

- Service support establishing an agreed call-out and response time along with a response centre serving as a single window for all your technical-support needs

- Maintenance management programmes achieving zero breakdowns through accurate identification of problems and condition-based maintenance
- Operator effectiveness programs addressing plant-training needs through a wide range of training programmes
- Safety improvement programme assuring systems are protected from virus attacks and other external security threats
- Productivity improvements by visualising and condition monitoring of assets using KPI tool
- Migration support to reduce risk of operating an older control system with its migration roadmap

Move ahead of the challenges with LCM, achieving Asset Excellence, uniquely put together to cater for all your requirements. Gain maximum returns from your investment without compromising on cost efficiency, delivering just what your plant needs; call your Yokogawa representative today or e-mail: [feedback@ml.bh.yokogawa.com](mailto:feedback@ml.bh.yokogawa.com)

## Become a Yokogawa Plus member

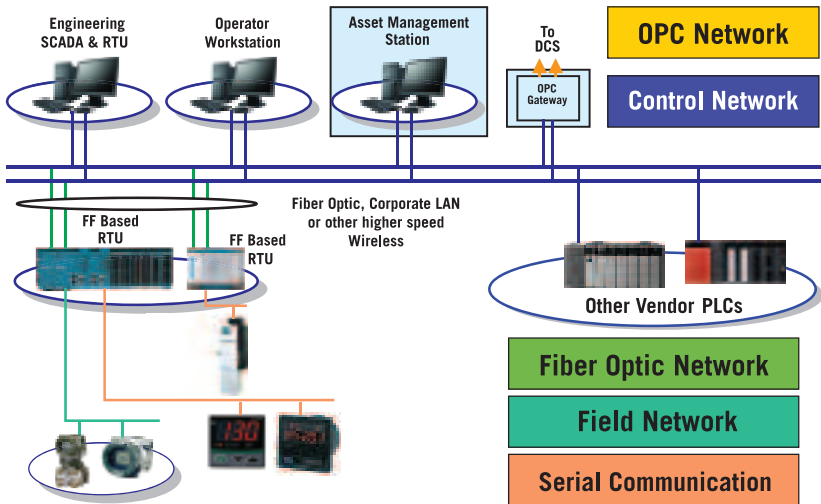
Yokogawa Plus is an online members' page for current or prospective users of the CENTUM series production control systems, ProSafe-RS safety instrumentation system, Exa series solution-based packages, STARDOM network-based control systems or PRM plant asset management. Information restricted to registered users such as product specifications and technical documents can be downloaded. Members can get comprehensive review of Yokogawa's production systems and solutions by logging in to the Yokogawa Plus once.

To sign-up please go to the following address:

<https://plus.yokogawa.co.jp/Membership/>

# Yokogawa SCADA Solutions in pace with the latest advances in technology

By  
Balaji Durairaj



Ethernet, TCP/IP and web technologies allows hackers and virus writers to take advantage of the control industry's ignorance. The result is a growing number of unpublicised cyber-based security events that are affecting critical infrastructure and industries.

To prevent cyber attacks, network security tests become very critical. Wurdtech Analytics offers rigorous security tests specifically designed for addressing network security vulnerabilities in control systems.

Wurdtech Analytics used version 1.0 of its Pyrrhus Security Testing Platform to assess the security of STARDOM controller at the British Columbia Institute of Technology (BCIT) Internet Engineering Lab and came out with result that "Stardom is well designed and hardened against most common Ethernet and TCP/IP layer attacks and should be stable under most network conditions."



## Remote Maintenance with use of Foundation Fieldbus Technology

Use of fiber optic high speed Ethernet TCP/IP communications and use of Foundation Fieldbus means that remote maintenance for control station RTU, including device level diagnostics and maintenance from remote is now possible with the use of Yokogawa's latest state of the art Stardom controllers.

Foundation Fieldbus allows for predictive maintenance thus considerably reducing plant downtime.

Use of Foundation field bus brings its inherent benefits like reductions in Operational Expenditure (OPEX) and Capital Expenditure (CAPEX) and hence lower total cost of ownership (TCO).

## Security against Cyber Attacks:

The move to open standards such as

# Automation System Upgrade in Oil Refinery

By  
B. Ravikumar



To upgrade the control system at Saudi Arabia's Rabigh Refinery, 160 kilometres north of Jeddah, Yokogawa completed in March 2007 the implementation of an oil-blending system, multi-variable control and a heater-pass balance control together with other control loops. 20 existing and 10 newly installed subsystem interfaces increased the complexity of the hot cutover and function testing.

The former control system was replaced with a state-of-the-art distributed control system (DCS). Previously, the entire complex was controlled by single-loop controllers (SLC) and a Non-Yokogawa DCS.

With SNC Lavalin, Inc., as the design contractor and Carlo Gavazzi as construction contractor, Yokogawa delivered the DCS with the engineering and testing done at its Middle East office in Bahrain. The decision to introduce the new system was motivated by the need to reduce the high maintenance costs of the SLC and to obtain improved functionality. The selection criteria emphasised system reliability and the ability to replace the system while the plant was actually operational, termed a hot cutover. The Rabigh Refinery has a 400,000-barrel-per-day crude-topping facility.

# Yokogawa Happenings: Regional Events

## First FDT Roadshow

The first FDT Roadshow in the Middle East took place in Bahrain on May 9 with an impressive number of 160 participants, of which over 100 were end users. This was the largest number of participants in FDT events in the world.

The event was supported by the twelve FDT Group member companies including: Yokogawa, ABB, Endress & Hauser, Honeywell, Invensys, Metso Automation, Pepperl & Fuchs, Rockwell Automation, Samson, Turck, Vega and Woodhead.

Jim Sprague of Saudi Aramco gave an excellent key note speech that explained the problems they currently face and their



*Mr. Jim Sprague, Saudi Aramco during his key note speech. (Below) Yokogawa's stand at the event.*



requirements for improvement in terms of "real-true" interoperability. His key message was that "FDT provides the true interoperability that is required between devices and systems for an effective Asset Management".

## Yokogawa opens \$39m facility at Bedok



Yokogawa Electric Corporation unveiled its new Singapore building headquarters in early July and will utilise its Singapore operations to achieve our goal to be the global leader in industrial automation and technology solutions by 2010.

"To accelerate business expansion and support our vision of becoming the leading industrial automation player by 2010, Yokogawa will continue to strengthen the Singapore operation and create a firm platform for conducting business in Asia and beyond," said president and CEO, Mr Shuzo Kaihori.

## Yokogawa Middle East Roadshow



The first Roadshow in the region was conducted in Le Royal Meridien UAE on June 6. The theme of the Roadshow was "Operational Excellence", and Yokogawa unfolded the plant wide Integrated Automation Solutions covering CS3000 and ProSafe RS. Attendance was a mix of EPC, consultants and end users.

## 6th Fieldbus Technology Exhibition

Yokogawa took part in the Fieldbus exhibition on June 11-13, showcasing YME's Integrated Production Control System and FDT technology. A seminar for the FDT technology was conducted in conjunction with the exhibition.

## Saudi Aramco 4th Annual Gas Operation Engineering Exchange Forum

Yokogawa participated at the event hosted at the Holiday Inn in Al-Khobar, the forum focused on the theme "Go future... is today's reality". Topics covered included new technologies and energy conservation and was attended by 150 Saudi Aramco end users and attendees.

## KFUPM Workshop

Yokogawa participated in this two day event which was an exhibition and seminar. Yokogawa's keynote talk by Shirai-san focused on the theme of "Control & Automation - a Future Trend" at the seminar.

# Soaring High (Japanese Kite and Yokogawa Corporate Logo)

By  
Kokichi Honda

"Kites connect people... the kite is a fragile creation yet it occupies a special place in our hearts and minds. Flying high above, the kite invites you to look up into the limitless sky, to let your soul soar up into the blue."

The history of kites in Japan dates back to 649 AD where Buddhist missionaries brought them into the country from China. The Japanese absorbed much of the Chinese culture but they developed their own distinctive kite designs and traditions.

In early times, the Japanese kite was used for practical purposes such as in the construction of many shrines and temples in Japan where large kites were used to lift tiles and other materials up to workers on the roof tops. In Japan kite flying became so popular that each of its regions has its own unique kite design. Kites which are decorated with a crane or turtle symbolise long life; the famed dragon kite denotes prosperity because of the dragon's ability to rise to the heavens. Other kites are said to bring luck, frighten evil spirits and give hope for knowledge and learning.

Most Japanese Kites are flown without tails, a commonly held belief in Japan is that if a kite requires a tail in order to fly it is not well designed - although in strong winds tails are added. Very big kites have always held a fascination for the Japanese and there are still a couple of very popular kite festivals where giant kites are flown.

During the 2nd week of June two teams from the city of Shirone battle against each other from opposite banks of the

river with kites measuring 7 x 5 metres. When they crash or are dragged into the water the paper covering becomes very wet and the bright paint pigments dissolves, making the water a wonderful colour, leaving only a skeleton bamboo frame.

Quite a few people say that, from the Yokogawa corporate logo, they get an impression of a kite. Yes, in the sense of "soaring high". But, we actually designed it deriving inspiration from a rising sun. We use yellow as the corporate colour, the



colour of the sun, representing life, energy and benevolence. The acute angle and sharp straight edges of the upper half of the symbol represent the precision of measurement and control, technology, Yokogawa's founding strength. The gentle curves in the lower half of the symbol symbolise the warm-hearted nature of Yokogawa's people, which exists in balance with precision.

**YOKOGAWA** ◆

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