



A Yokogawa Commitment to Industry

**vigilance**<sup>™</sup>

## SUCCESS STORY

# Collaborative Project Execution Enables Smooth FOUNDATION fieldbus Deployment / Scarab Saffron Project in Egypt

**Location:** Alexandria, Egypt

**Order Date:** July 2001

**Completion:** March 2003

**Industry:** Oil & Gas

### About Scarab Saffron

The Scarab Saffron gas fields represent the first deepwater development to be undertaken in the eastern Mediterranean. The fields lie in the West Delta Deep Marine concession near Alexandria, Egypt, and this is the largest gas field development in that country. This project was the first and the largest of the projects undertaken for the on-shore portion of this concession, and integration and engineering of the integrated control system (ICS) were carried out under the leadership of Yokogawa Middle East (YME). Basic and detailed engineering were done by the DMC Consortium, whose members were Bechtel, Enppi, and Intec.

### Reasons for Selecting Yokogawa

To reduce the operating costs of the new on-shore facilities, end users were interested in using the latest FOUNDATION fieldbus technology. Although neither the users nor the engineering companies had direct experience working with this technology, they estimated that the merits of introducing FOUNDATION fieldbus outweighed the risks.

### Details of This Project

The project proceeded without delay in the delivery, commissioning and operation phases, and was completed in less than one year. Design, engineering, procurement, supply, testing and commissioning were completed smoothly and on schedule, bringing the benefits of FOUNDATION fieldbus to the users. Yokogawa's scope of supply was as follows:

- Fieldbus control system with distributed control system (DCS) technologies
- Plant asset management (PAM) system
- High integrity pressure protection systems (HIPPS)
- Emergency shutdown system (ESD)
- Fire & gas system (F&G)

- FOUNDATION fieldbus & HART field devices
- Weather monitoring station

## Results

The introduction of DCS as the Fieldbus control system together with Yokogawa's intelligent field devices enabled both the diagnosis and remote maintenance of plant resources using Plant Resource Manager (PRM).

Paul Reeve, ICS Package Coordinator for the Scarab Saffron Project, Bechtel INTEC Consortium, commented on the successful outcome as follows:

### <Comment 1> Teamwork and Expertise

"Control systems are notorious for both delays and cost over-runs, but this project has been mercifully free of both. Yokogawa's commitment to working as part of a team on this project resulted in an understanding of the project aims and objectives from the outset. Perhaps as important was that in choosing Fieldbus technology we needed to rely on your knowledge of a system which none of the DMC/Burullus contingent\* had ever operated. Your help in what was a very steep learning curve cannot be understated."

\*DMC was the engineering consortium and Burullus was the end user JV

### <Comment 2> Quality and Cost

"The quality of the materials offered in Yokogawa's quotation and supplied were of a high standard, both those of Yokogawa's manufacture, which one would expect, but also bought out items. We frequently see corners cut by vendors who offer materials that conform to the letter of the specification, but in reality are not up to the actual needs of the project. Similarly, the quotation included realistic estimates for items such as design of screens and software programming activities."

### <Comment 3> Project Management and Delivery

"The project management of the job from Yokogawa's side was first class. As a team, despite a number of difficulties, we were able to move forward throughout the life of the job. The flexibility and good humor, that particularly characterized the Bahrain contingent's work, was a pleasant change from the contractual approach of many of your competitors. It allowed all parties to focus on addressing problems rather than resorting to a "them and us" approach. Last minute changes to key parts of the plant were addressed in a pragmatic way and despite the fact that substantial work resulted from these changes, we were able to maintain the original schedule due to the hard work of all parties."

### <Comment 4> FAT and Commissioning

"The staging and factory acceptance test in Holland, I believe showed Yokogawa at its best. We had a series of separate parties involved. Yokogawa were represented by the Dutch and Bahrain sides of the company and their Egyptian agents, ourselves as Bechtel, Enppi, Burullus and Rashpetco as future operators and also Third Parties supplying materials to interface with the ICS package. The potential for a disaster was very high, but

## <Comment 5> Site Work and Support

"In speaking to people at site, they have been very complimentary about the support that we have received from the various parts of your company. The work has once again been of the highest quality and the commitment of the personnel has been exceptional. Where the commissioning of the DCS/ICS package is often the source of continual concern, on this project I have been pleasantly surprised at how little comment has been made about the package. No news is certainly good news. It is also a remarkable point that this project has been running properly and without any trouble for more than one year."

## Commitments by Yokogawa

As exemplified by this project, the industrial front-runners are aiming to introduce the latest technologies. To quote Yoshitsugu Morioka, General Manager of Systems Marketing for Fieldbus systems and devices, "As users make the paradigm shift from traditional analog control systems to digital based Fieldbus systems and devices, they want to partner with a knowledgeable and dependable supplier who not only has taken a leadership role in the development of the technology but also delivers a full implementation of all the power and features of the technology. Our Fieldbus implementation is robust and fully supports the interoperability concept. Users should expect a full Fieldbus implementation and we provide one of the most powerful set of solutions."

The achievements and customer satisfaction with this Scarab Saffron project is having a big influence on the next project. Users have decided to use Yokogawa as a single source for a new project including DCS, ESD, F&G, HIPPS systems, and HIPPS valves. The new systems will be integrated with this Scarab Saffron project.

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**System:** Fieldbus Control System

**System Configuration:** CENTUM CS 3000 R3 DCS with field interface I/O (FIO)  
for FOUNDATION fieldbus and HART

- 5 x large full redundant control station (LFCS)
- 5 x human interface station (HIS) dual screen
- 1 x engineering station
- 1 x Plant Resource Manager
- (Real-time device maintenance management & advanced diagnosis package)
  - PRM Server
  - PRM Client
  - PRM Communication Server
- Dual interface station between DCS system and safety system