

## Smar supplies more than 400 transmitters to ConocoPhillips for Ekofisk Offshore Platform



Smar technology present at the Ekofisk 2/4M offshore platform in the North Sea - Norway

The Ekofisk 2/4M offshore platform in the North Sea, operated by ConocoPhillips, will count on Smar technology. Through Autek, the Norwegian representative located in Drammen, Smar was awarded the supply of more than 400 Pressure and Temperature Transmitters.

"Since 1997 Smar has been supplying equipment (gage & differential pressure transmitters with remote seals or manifolds, temperature transmitters, etc.) in various successful applications for Ekofisk's oil & gas platforms", said Geir Falkevik, Sales Manager at Autek. "We have implemented some special features in our transmitters to accommodate the Operator's strict specifications and requirements", added Max Ludewig, Smar Business Development Manager for Scandinavian countries.

With a considerable experience in supplying equipment to the oil & gas market, Smar has developed several features to deliver the "best in class" products in the LD301 (pressure

and TT301 (temperature) transmitters. For offshore platforms such as Ekofisk, Smar produces transmitters with mechanical specifications to prevent marine corrosion, which include 316 stainless steel housing, stainless steel bolts/nuts, flanges in Super Duplex, diaphragms in Hastelloy and special stainless steel armor for the remote seals.

Advanced diagnostic and programmable control features such as PID, flow calculation & totalization, temperature compensation, 16-point linearization and configuration in engineering units also compose Smar transmitters. Utilizing the PID included in these transmitters, ConocoPhillips -

the giant multinational Oil & Gas Company, third largest integrated energy company in the United States - will be able to save extensively in start-up & commissioning because the loop can be tested in the field before connecting to the general control system. All of these features can be programmed by the Palm® handheld using our Universal Hart Configurator HPC301 or via the PC/laptop software CONF401.

Smar considers their Customers as partners in continuing R&D development. Using the specific and unique criteria originated and transmitted by the Customers, a "customized" design, manufacture and delivery of equipment and systems can be achieved to accommodate a diverse range of applications and markets worldwide. These markets include oil & gas, petrochemical, refineries, sugar & alcohol, pulp & paper, water treatment, power plants, food & beverage, mining, nuclear, marine and others.

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# Egypt's largest oil refinery amplifies control system using Smar SYSTEM302

Suez Oil Company (SUCO), the largest refinery in Egypt, is implementing Foundation Fieldbus technology to expand its production. Currently, the refinery is producing 146,000 barrels/day at the Ras Budran facility on the Sinai Peninsula.

Since April, the amplified system has been operating with the Smar SYSTEM302 to control three sand filters on the saltwater injection plant. In this new implant phase, SYSTEM302 will be added to the control loops to monitor pressure, temperature and the de-aeration level of the water injection plant. The facility previously used pneumatic controllers.

SUCO's management decided to invest in Foundation Fieldbus when they recognized that the maintenance cost for the aging



Suez Oil Company, at Sinai Fields - Egypt

pneumatic system was increasingly high and many components were now out of production. When a spare part was needed, it was necessary to have it custom produced for the control system.

"In addition to reducing component costs, SYSTEM302 offered other advantages to the client," says Roberto Pinheiro, Smar Business Development Manager. "The operators now have a comprehensive, computerized system to monitor the plant operation, with animated graphics which are updated every second with real time information on the process".

According to Pinheiro, Smar's next step at SUCO will be to include the sand filters retrowash system and the start and control of the saltwater injection pumps. "The complete modernization project for the water injection plant will be in November of this year, when entire control will be transferred to SYSTEM302," he finalized.



## Training program enhanced

This year, the Smar International Training Group released the 2004 Smar Training Courses brochure. This piece was developed in order to provide more details and awareness of Smar's extensive training program, which continues to be highly successful.

Last February, the Smar training group conducted a SYSTEM302 (120 hours) training course at Smar International Corporation in Houston - USA, for four Weltek Inc. engineers from Nigeria. In April, in Ribeirão Preto, São Paulo - Brazil, the Smar Application Engineering team conducted a four-week Foundation Fieldbus Training Program - FFTP01 (160 hours) training session for six participants, including technicians from Israel (Bacsoft), Mexico (J.Diaz and Controlflux) and Smar Netherlands. Congratulations to our newest certified friends, worldwide.



2004 Smar Training Courses Folder



April FFTP01 training instructors and participants

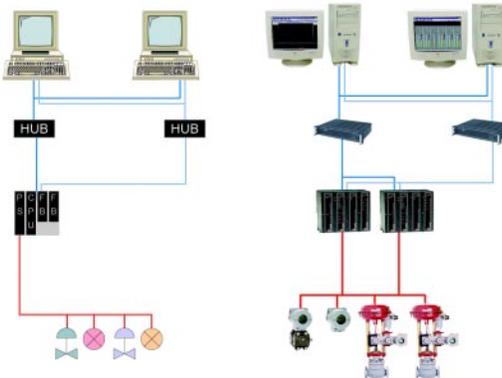


# Smar registers new linking device with advances of HSE technology

Taking a significant step to advance HSE technology, Smar has registered a new class of linking device: the DF51 42a2. The new product is set apart from its predecessor, the 42a, by the type of specification used for implementing the HSE communication battery.

From the beginning, the names Fieldbus and Smar have been closely associated with worldwide technology leadership. This important relationship started at Smar in 1994 with the implementation of control systems based on fieldbus H1 technology. Most recently, it has been demonstrated through new trends and technologies such as the High Speed Ethernet (HSE) protocol.

Smar's use of HSE has grown continuously over the years. In 2000, the company installed the first commercial HSE device on Petrobras' Namorado I offshore platform. In 2001, it registered its first linking device: the DF51 42a Class. That event opened new markets to Smar products and technology and led to the establishment of significant partnerships with major suppliers - such as Metso Automation, Endress+Hauser, and Rockwell



Automation - interested in the HSE protocol.

Today, Smar's HSE development has resulted in the registration of a new class of linking device: the DF51 42a2. A unique feature- the type of specification used for implementing the HSE communication battery - differentiates the 42a2 device from the 42a. The 42a is based on the FF FS 1.1 final

specification, while the 42a2 Class device incorporates the FF FS 1.29 final specification. The FS 1.29 specification features a new, all-encompassing directory format for an HSE equipment's net information management base, which contains data on the spec revision implemented by the equipment and the class of profile supported. It also provides a new, more direct and automatic connection option for the equipment application directory based on either the HSE or H1 communication protocols.

Registration of the DF51 42a2 linking device is a significant step in the advancement of HSE technology, once again proving that Smar is first in Fieldbus.

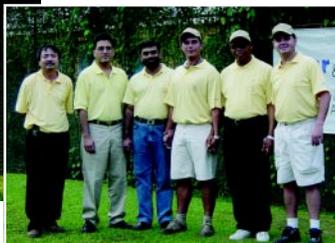


FLASH

## Shell Nigeria 2004 Annual Golf Tournament



The annual tournament has been organized by Shell Nigeria golf aficionados



From the left to right: Mike Do - Shell Nigeria, Ash Thapliyal - Intech, Hamid Mukhtar - Intech, Roberto Pinheiro - Smar, Simon Ukpaka - Nigerian National Petroleum Corp, Claudio Borges - Smar

The Shell Nigeria 2004 Inaugural Golf Tournament was held again this year with the participation of Smar and its Nigerian systems integrator, Intech. Shell Nigeria golf aficionados living in Port Harcourt Compound organize the annual tournament and invite guests from other Shell locations and various local golf courses. The event took place at the Shell Port Harcourt Compound golf course with more than 60 contenders participating.



# Siemens Demag Delaval presents compressor control system with SYSTEM302 at Interkama

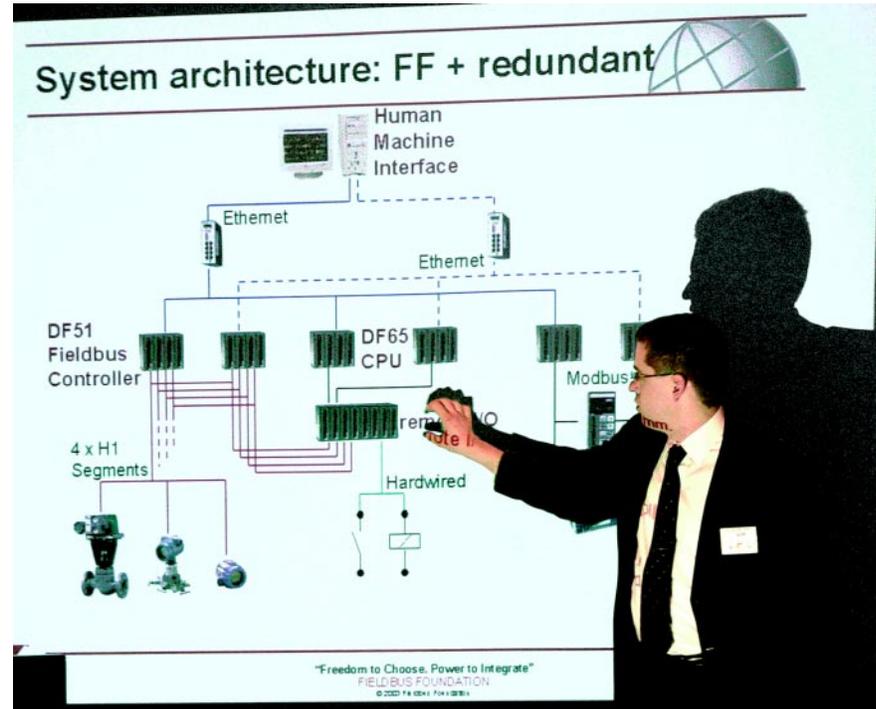
At the last Interkama exhibition held in Hannover, Germany, the Fieldbus Foundation hosted two events: the European End User Council and the Fieldbus Engineering Workshop. The engineering workshop is a platform where engineering companies can share their experiences with FOUNDATION™ Fieldbus.

At this particular workshop, Leo van den Hoorn, lead engineer from Imtech, and Arjan Asbreuk, lead engineer from Siemens Demag Delaval presented their recent experiences with FOUNDATION™ Fieldbus and Smar. Imtech is a major Dutch company that provides engineering and maintenance services to the industry. Siemens Demag Delaval is a world-renowned manufacturer of centrifugal compressors for the oil & gas industry.

Siemens Demag Delaval had recently completed its very first successful FOUNDATION™ Fieldbus project for a compressor skid utilizing Smar's System302. The skid will be part of the Shell Bonny Island project located in Nigeria.

The control system incorporates a fully redundant H1 to handle communication with the field devices and an integrated redundant logic co-processor for the start/stop sequence of the compressors. Configuration was done by Siemens Demag Delaval and the Smar applications engineering team provided support for the project. As Leo van den Hoorn stated at the end of his presentation, "Our main lesson is that when you start with a project like this, think FOUNDATION™ Fieldbus from day one!"

This is the first time FOUNDATION™ Fieldbus has successfully been used for compressor control".



Leo van den Hoorn presenting redundant FF architecture

## Interkama Germany 2004

Smar participated of the Fieldbus Foundation stand at the International Industrial Automation Exhibition 2004 - Interkama. SYSTEM302 was presented with focus on the AssetView and the HI302.

In addition, Smar Representatives attended the FF End User Council Meeting, where vendors and users of FOUNDATION™ Fieldbus products gathered for an overview of the latest updates and developments.

A full copy of the presentation can be found on the website of the Fieldbus Foundation:

<http://www.fieldbus.org/endusersupport/enduserpresentations/interkama2004/presentations/siemens.pps>



# Smar on Snamprogetti Vendors List

Smar products and solutions are now included in the vendor's list for Snamprogetti, the international engineering & construction contractor of the Eni group. Snamprogetti is an Italian company that operates in the international market

as a main contractor for the design and implementation of large-sized projects in refinery and gas facilities, including: chemical, petrochemical and fertilizer plants; onshore and offshore pipeline systems; infrastructures; power and environmental plants.

## SYSTEM302 highlighted at OGAWA 2004

The OGAWA Industrial Show was held in Muscat, Sultanate of Oman, April 19-21 2004. Smar and its local agent OHI Petroleum Services attended the show. During the event, Smar presented the SYSTEM302 process automation system, demonstrating locally on an oil and gas

production and distribution process.

Smar also hosted several distinguished visitors from the local Oil and Gas industry, including Petroleum Development of Oman, Oman Gas Company and Oman Refining Company, in addition to other engineering and consulting firms.



EVENT

# Smar present at the OPC Interoperability Workshop 2004

Smar was present at the OPC Interoperability Workshop 2004 at the Invensys/Wonderware headquarters in Lake Forest, California, USA. The purpose of this annual event, hosted from March 29th through April 2nd, is to promote interoperability tests among the OPC Foundation member's respective OPC products. OPC is a widely used technology used primarily in process supervision.

several clients also testing in the event. He reviewed and confirmed that all the specification requisites were correctly implemented. Smar's products succeeded on every requisite tested, assuring complete interoperability with the 21 most used OPC tools and applications available on the market, which were present in the event.

Smar included the DFI302 platform servers (DFI OLE Server and HSE OLE Server) in the tests. These servers follow the OPC Data Access 2.05A specification and were recently certified by the OPC Foundation as compliant servers. It is important to recognize that the OPC server's main component is used as a base for all OPC servers used with Smar products.

The Alarm & Events server, which is in final development stages and follows the OPC Alarm & Events 1.10 specification, was also submitted for testing.

Smar's R&D engineer, Ronaldo Duarte, conducted the tests in order to insure seamless operation with the simultaneous access from



Smar's R&D engineer, Ronaldo Duarte, conducting the interoperability tests



# Smar presents ISA web seminar on FOUNDATION™ Fieldbus

**H1 terminology and basics**

The diagram illustrates the H1 Fieldbus system architecture. It shows a Host computer connected to an HSE Fieldbus Interface. This interface is connected to a Port, which is terminated at both ends by Terminators. The Port is connected to an H1 Fieldbus, which is terminated at both ends by Terminators. The H1 Fieldbus is connected to various devices, including a PLC and a DCS.

- 12-16 device per H1 bus
- Terminator in each end
- Host-end terminator often built-in
- Network connects to a Port on the device
- Linking device has many ports
- Proprietary host-level networks usually have DCS/PLC interface card
- Many networks per plant

The overview seminar introduces the Foundation™ Fieldbus system architecture including H1 and HSE buses

In March 2004, ISA conducted web seminars on FOUNDATION™ Fieldbus technology for the third time in recent months. The current adoption rate of this technology is extraordinary and was reflected in the seminar participation figures. With 7 sites registered, there were more than 60 participants for the web seminar "Overview of FOUNDATION™ Fieldbus Technology". For the "FOUNDATION™ Fieldbus H1 Field-Level Installation and Commissioning" web seminar, 8 sites had registered totaling over 50 participants. The presenter of these web seminars is ISA's best selling author Jonas Berge (General Manager, Smar Singapore).

Although there are numerous users around the world using this technology in virtually all industries; and with major users now requiring FOUNDATION™ Fieldbus and allowing no alternative technologies, there are still countless people to which fieldbus is new. These individuals are now utilizing the web to learn this technology in order to close the gap on the leadership enjoyed by those who have implemented Fieldbus technology from its inception.

The overview seminar introduces the FOUNDATION™ Fieldbus system architecture including H1 and HSE buses. It touches on benefits and savings, network topologies, the block concept, coexistence with legacy conventional I/O, troubleshooting tools, operation, engineering, as well as maintenance and asset management. Specific concerns such as availability and safety are also addressed. The

second seminar goes into greater detail on installation and commissioning of H1. It teaches network topologies, power supply considerations, intrinsic safety, wire types and length, repeaters and bridges, as well as host software preparation and commissioning. Recently new material on non-incendive installation practices was also added.

The technology behind the web seminar is simple. The slides are displayed in a regular web browser from the Internet after the participants log in with a name and password sent in advance. Participants listen to the speaker by dialing to a call center (toll free in the USA). An experienced conference operator facilitates the calls, ensures sound quality, and acts as host. Multiple participants at each site are permitted and quite common. The

presenter has tools such as a "laser pointer", "check", and "pens", etc., and drives the presentation by moving through the slides. Participating sites are also given handouts. The presentation lasts 1-1/2 hours and is paced in three blocks each of a 20-minute slide presentation followed by 10 minutes of questions and answers. During the Q&A, the users can queue to ask questions by pressing a key on the phone. Users can also key in questions "live" through the Internet. Participant interaction is very effective with several questions probing further into specific details and providing shared experience for the group. Feedback from these seminars has been very encouraging and ideas and new developments continue to be added into the presentation which is now in its third revision.

The two seminars are based on the award winning book "Fieldbuses for Process Control: Engineering, Operation, and Maintenance" written by Jonas and now available in several languages. The book and the seminars complement each other. The book permits you to study at your own pace, while the seminar allows you to ask the author questions first hand.

For more information about ISA seminars and others subjects go to <http://www.isa.org/fieldbuses>



# FY301 provides major cost saving in Swedish pulp and paper facility



The FY has the unique ability to be mounted remotely from the device it is controlling

Billerud (Gruvön, Sweden) is one of the major plants in the country with an annual production of 545,000 tons of paper and 85,000 tons of pulp. Gruvön is also one of the global market leaders in packaging paper manufacture. These products, including containerboard and Kraft paper, are used all over the world to provide an assortment of food packaging. The majority of the paper is exported outside Sweden and 20% is exported outside Europe. Billerud produces first-class quality pulp and paper, with unique properties for special applications.

Until June 2002, Billerud was having problems with a rotary control valve, due to very heavy vibration and stress on it, and recurring weekly service was required to prevent any disturbance in production. Although

many steps had been taken to resolve this problem, frequent service continued to be needed. The company then installed the Smar FY301 positioner with remote Hall-effect sensor on that valve, with the objective of cutting maintenance cost and improve production reliability.

The initial goal was to reduce service from once a week to once a month. The FY301 with remote Hall-effect allowed even greater results. The first service was done six months after the FY301 had been installed. The expression "Plug and Play" applies to this installation, as there were no unforeseen stops due to positioner breakdown since the date of installation. The

application was very successful and the target to reduce maintenance was easily achieved.

The positioner in this application is mounted on a Somas valve. Somas is known for high quality and performance in pulp and paper applications and is one of the leading names in

this market. Somas has more than

50 years of experience in the development and manufacture of valves. Production is located in Säffle, Sweden, and 50~60% of the total annual production is exported.

"The key to the success of the FY301 in Sweden was the ability to apply the unique features of the positioner. These features include: non-contact position sensing (Hall-effect sensor); a universal model (single & double acting); good for rotary and linear valves (magnet change); universal brackets or specially designed and customized for any valve type; remote Hall-effect sensor (up to 20 meters from positioner); and diagnostic capabilities (travel time, hysteresis etc)" said Max Ludewig, Smar Business Development Manager for the Scandinavian market.

See all FY301 features in  
<https://www.smar.com/products/fy301.asp> .



# DFI302: an innovative, ever-evolving architecture



Since 1997, Fieldbus H1 technology and ethernet networks have emerged as the new direction for floor-level integration. The Fieldbus Universal Bridge DFI302 was designed to incorporate these features and the product has been continuously developed since its introduction.

The DFI302 was a challenge for dozens of development engineers, as it required the combination of hardware and software to incorporate decades of proven experience in real time, process control and automation. This development also allowed for additional requirements to meet the specifications of Smar's clients and partners. World market leaders took to the new technology and quickly adopted the new device.

Always on the alert for new market trends, Smar trusted in Foundation OPC technology from the beginning. This enabled the company to incorporate the OPC concepts accepted worldwide for systems integration in its initial version of the DFI. In other words, OPC Servers were developed for the DFI302, permitting connection between the best supervision and control systems, such as Process View, In Touch, Fix etc.

Key product features include: instantiation capability for up to 100 advanced blocks, native integration with Fieldbus networks, easy integration with Rockwell, ABB, Siemens and

SDCDs (including those already installed in the plant). The DFI is also valuable in Asset Management by supplying the required information for AssetView, Smar's asset management software.

Many leading companies have already adopted the DFI302. One excellent example is Petrobras (Brazil) that has installed the DFI302 in a PNA-1 platform. This installation proves how this state-of-the-art technology coexists in such aggressive environments as an offshore oil platform, which is 70 km away from land. Since February 2000, a number of DFI302s were installed on that platform which is located at the Campos basin on the Rio de Janeiro coast. The product continues to control the deaeration level, gas pipeline pressure and the separators, among other functions.

## DFI302 key features:

- Block and network configuration through Syscon
- Integrated hardware platform with Fieldbus source and impedance
- Access to E/S digital and analog modules
- Access to pulse modules
- Native connection with Fieldbus H1, HSE and Modbus networks
- Supports LAS and application redundancy
- Executes up to 100 advanced or standard blocks
- Contains co-processor for ladder language execution
- OPC server compatible and approved on interoperability tests
- Open architecture supporting radio-ethernet connection - enables telemetry applications

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