Today, companies must find new ways to increase production efficiency ... reduce operating costs ... accelerate delivery times ... and meet strict government regulations.

Maximizing your operations is no longer the goal; in these times, you must optimise your business enterprise.

The Fieldbus Foundation’s technology is not just a solution to the challenges facing industry. Rather, it is a means to the solution — an enabling technology providing automation end users with the “Freedom to Choose” and the “Power to Integrate.”

“End users should not forget the real objective of implementing fieldbus: reliable operations and improved profitability. At Shell, the technology improved asset utilisation, lowered fixed and variable costs, and reduced maintenance expenses.”

James Rhame
Asset Development Manager
Shell Chemical

An Industry Standard — Implemented Worldwide

As the leading not-for-profit trade organisation dedicated to fieldbus, the Fieldbus Foundation™ represents over 350 companies worldwide. Members include almost all major suppliers of control systems and instrumentation, as well as many of the largest end users of plant automation equipment.

Since its introduction in 1994, the Fieldbus Foundation’s open, non-proprietary technology, Fieldbus Foundation™, has gained unprecedented industry support. More than 10,000 fieldbus control systems, and hundreds of thousands of fieldbus devices, are now in service around the world.

Fieldbus Foundation™ is recognised as the de-facto industry standard for process automation. It is fully compliant with all recognised international fieldbus standards, including ISA S50, IEC 61158 and CENELEC EN50170.

Power to Integrate Your Plant Enterprise

Fieldbus Foundation™ provides end users with the power to integrate their plant enterprise — and the freedom to choose how to integrate.

The H1/HSE fieldbus architecture not only integrates legacy systems and other bus protocols, but also unifies devices, hosts, control subsystems, data servers and large data generators across the enterprise.

Fieldbus Foundation™ provides robust digital control based on a tightly integrated system architecture and a high-speed backbone for plant operations. This, in turn, removes the constraints on interoperability for field instruments, controllers and subsystems.

Fieldbus technology unifies today’s smart instrumentation and analytical highway to provide all-digital access to operational parameters and data at the point of measurement.

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James Rhame
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The Only Complete, Interoperable Fieldbus Solution

Fieldbus Foundation™ is a powerful, all-digital, two-way communications system interconnecting field equipment on a single process control network. The technology offers a complete, open fieldbus solution: H1 fieldbus for continuous control; and COTS-based High Speed Ethernet (HSE) for advanced process control, hybrid or semi-continuous control, and discrete automation.

Fieldbus Foundation™ makes it possible to “mine” important information from the plant floor. When used correctly, this information empowers operators and makes plant operation easier.

Only Fieldbus Foundation™ enables true distributed control, as well as device and subsystem interoperability — without the need for custom programming.

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James Rhame
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Foundation Fieldbus™ Technology with a Business Purpose
Improved Business Results – Wherever You Operate

From the petrochemical refineries of the Middle East, to Oil & Gas Operations in Nigeria, FOUNDATION fieldbus is improving the business results of industrial end users throughout Europe – and around the world.

Greater Efficiency with EDDL

The Electronic Device Description Language (EDDL) is a text-based language for describing the digital communication characteristics of intelligent devices and equipment parameters in an Operating System (OS) and Human Machine Interface (HMI)-neutral environment. EDDL enables a host system manufacturer to create a single engineering environment that eliminates the need for custom software drivers for each device type.

The Fieldbus Foundation recently signed an addendum to its agreement with HART Communication Foundation, PROFIBUS User Organisation and OPC Foundation to further develop EDDL. The Fieldbus Foundation President and CEO Richard Timoney believes the cooperation project will protect industry investments in EDDL by enabling additional enhancements to the IEC 61804 standard.

With EDDL, device developers do not need to deal with the burden of designing and programming a graphic user interface to run under a variety of platforms and environments, from large HMIs to small hand-helds. Instead, they can utilise common graphic display capabilities provided by commands in the EDDL.

Michael Schwibach, BASF AG
Speaker of the Working Group 2.6 “Fieldbusses” NAMUR User Association of Process Control Technology in Chemical and Pharmaceutical Industries

“As well as the advantages regarding installation costs, fieldbus technology also offers considerable added value, e.g. with diagnostics and device parameterisation. Furthermore the savings potential in maintenance costs should not be forgotten.”

Faster Start-ups and Lower Costs

FOUNDATION fieldbus takes advantage of today’s intelligent instrumentation to provide reliable, deterministic control. Plus, it reduces wiring requirements, reduces engineering and commissioning time and costs. Furthermore it lowers installation and equipments costs – your critical capital expenditures.

Unlike traditional control technology, FOUNDATION fieldbus delivers system self-diagnostics supporting proactive device maintenance. Fieldbus diagnostics are also the key to implementing advanced asset management solutions. The result: lower operating expenditures and improved profitability.

FOUNDATION fieldbus, combined with asset management software, eliminates the high cost of preventive and unnecessary maintenance such as periodic valve rebuilds. Resources are spent on equipment requiring repair or service – not wasted on devices that don’t need it. Maintenance time is also reduced.

The Benefits of High Speed Ethernet

The Fieldbus Foundation answered the market’s demand for an open, integrated control architecture with its High Speed Ethernet (HSE) technology. Running at 100 MBit/s, HSE combines with the Foundation’s existing H1 (31.25 KBit/s) fieldbus protocol to provide a complete, complementary fieldbus solution: H1 for continuous control, and HSE for high-performance control applications and plant information integration.

HSE is an international standard (IEC 61158) providing tight integration and a free exchange of information across the plant enterprise. The HSE solution is superior to proprietary, Ethernet-based technologies since it provides end users with full access to data, high reliability, low costs and ease of use. It supports the entire range of fieldbus capabilities, including standard function blocks and Device Descriptions (DDs), as well as new application-specific Flexible Function Blocks (FFBs) for advanced process and applications.

The Fieldbus Foundation’s H1 + HSE architecture has defined a plant environment that moves beyond yesterday’s outdated, proprietary control platforms. It is field proven to integrate across multiple vendor offerings – delivering a best-in-class, fully interoperable plant automation solution.

“We expect the same functionalities as with conventional technology, with higher expectations in respect to commissioning, validation and maintenance. Proven solutions are now installed at Novartis.”

Dr. Joachim Zobel
Senior Automation Engineer
Novartis Pharma
Carbowl Spolka, Poland
Carbowl Spolka has chosen Fieldbus Non-Incentive Concept (FNICO) power supplies and wiring components for a new fieldbus instrumentation project at the company’s carbon dioxide production plant in Wloclawek. Part of the plant is classified as a Zone 2 hazardous area, and to maintain a uniform approach across the entire installation, an explosion protection method suitable for Zone 2 was required. The chosen solution with FOUNDATION fieldbus achieved all requirements perfectly.

Tatneft-NK-Oil, Russia
The plant in Nizhnekamsk is the first petrochemical plant in Russia that produces synthetic motor oil. It was constructed during 2002-2003 and started up in September 2003. The FOUNDATION fieldbus technology provides an open, decentralised digital control architecture with intrinsic safety that delivers rich diagnostic information about equipment health and status.

Shell, Nigeria
Fieldbus Intrinsically Safe Concept (FISCO) power supplies have been chosen for the Bonny Island Terminal Project, a new development of 24 oil storage tanks for Shell Petroleum Development Corporation in Nigeria. The control system includes a 6000 device FOUNDATION fieldbus network. 1600 of the devices are located in hazardous areas.

Shin-Etsu, Netherlands
Shin-Etsu is the largest PVC manufacturer in the world. The Vinyl Chloride Monomer is piped from the manufacturing plant at Rotterdam to the plant at Pernis where PVC is produced. The initial installation consists of 35 fieldbus segments in a Zone 2 hazardous area, using “control in the field”. Thanks to the use of FOUNDATION fieldbus technology it has been possible to eliminate wiring and termination failures, which had been identified as the main cause of maintenance problems.

Degussa, Germany
Degussa Herne upgraded the continuous production plant with FOUNDATION fieldbus. The investment is comparable to conventional solutions but offers the operator a lot of additional benefits like reduced process downtime and extended asset management.

LUKOIL, Russia
LUKOIL modernised its refinery in 2002 by installing FOUNDATION fieldbus. The plant produces 12 million tons of petroleum per year. The refinery has installed fieldbus at lube oil blending facility, at water treatment plant and at hydrogen rectification plant with over 3000 devices. The use of fieldbus enabled LUKOIL to lower its maintenance costs and manage assets in response to market demand.

HOW YOU CAN GET STARTED
Participate in Regional End User Activities
End users receive valuable assistance in implementing FOUNDATION fieldbus by participating in a regional Fieldbus Foundation End User Councils (EUC). EUCs are established in many regions such as:
- France
- Germany
- Russia / CIS
- United Kingdom
- ... and many more

For more information, e-mail: info@fieldbus.org

Global Certified Training Centers
In Europe, certified training centers offer training courses in convenient locations – helping you prepare your plant personnel to make full use of this revolutionary technology. Regional training centers include:

- Rheinhold & Mahla Industrieservice
  Frankfurt, Germany
  www.rum.de

- STC Brielle
  Rotterdam, The Netherlands
  www.stc-r.nl
The Fieldbus Foundation is a global organisation that has supported the adoption of new digital control technology for over a decade. The foundation helped establish a single, interoperable fieldbus standard, and our technology experts developed the modern fieldbus architecture reshaping the future of industrial automation.

**Freedom to Choose Best-in-Class Devices**

With Foundation fieldbus, end users have the freedom to choose best-in-class control products meeting their specific application needs — and the power to integrate those tools into their enterprise model.

The Fieldbus Foundation’s rigorous device testing and registration program allows you to choose from a growing selection of interoperable fieldbus products offered by the world’s leading automation equipment suppliers. Fieldbus instruments bearing the official foundation registration mark will work together seamlessly on the same digital control network. That means you can select the best device for the job, regardless of the manufacturer.

The foundation’s Host Interoperability Support Test (HIST) ensures that suppliers’ host systems provide all of the functionality of Foundation technology as part of an interoperable fieldbus control system.

**A Proven Choice for Digital Device Communications**

Foundation fieldbus is the industry’s “technology of choice” for digital device communications — and for good reason. Fieldbus controls utilising Electronic Device Description Language (EDDL) remove the constraints of outdated proprietary control systems.

EDDL is a rock-solid Electronic Device Description (EDD) solution enabling suppliers to describe the functionality of their devices to support open communications with any host system — from any vendor — using any operating system.

EDDL helps end users achieve optimum control strategies, and provides consistency and ease of use when developing human interfaces across multiple systems and platforms — all while preserving investments and avoiding future obsolescence.

**Invest with Confidence in the Future**

End users can invest in EDDL and take advantage of its many powerful standard features, such as device parameterisation, graphic visualisation and persistent data storage capabilities. Strict revision control by the foundation ensures backward compatibility for each registered device.

And EDDL is an international standard used by the major instrument network protocols. The technology has proven its reliability and effectiveness in millions of devices around the world.

“**What Foundation fieldbus has given us is a vendor-neutral DCS. When control resides in the field devices, the user is tied to his ‘system’ vendor only by the extent to which they support the functions available.”**

John D. Rezabek
Lead Control Engineer
ISP Lima BDO Manufacturing

“**Truly distributed field control, an open and modular architecture, and extensive diagnostic capabilities allowed us to implement significant process improvements.”**

Hamilton Roberto Baldo
Asset Management
Rhodia

Data Warehouse
Data Mining

Flexible Function Blocks:
- Hybrid/Batch
- Sensor Bus Interfacing
- Remote I/O
- Configuration Diagnostics

Control In The Field:
- PID
- Cascade
- Override
- Ratio

Advanced Alarming
Intrinsic Safety
- Entity Model
- FISCO Model
- Local Time Stamping
The new era of digital control is here. Don’t delay – leading companies in your industry are already realising the significant performance improvements, and business benefits, made possible by FOUNDATION fieldbus.

Certified Training: Take the Fast Track to Fieldbus

Getting started with FOUNDATION fieldbus is easy – the Fieldbus Foundation offers a wide range of technology instruction at its facility in Austin, Texas, and at STC Brielle, The Netherlands, as part of its expanding global training program.

For more information, visit www.fieldbus.org.

In addition, Fieldbus Foundation-certified training centers around the world provide comprehensive courses for end users of all skill levels. Certified training is available at the following sites:

- Lee College
  Baytown, Texas, USA

- Rheinhold & Mahla
  Frankfurt, Germany

- SAIT
  Calgary, Alberta, Canada

- STC Brielle
  The Netherlands

- Singapore Polytechnic
  Singapore

- Sinopec Yanshan
  Beijing, China

- Tri-State University
  Angola, Indiana, USA

- Waseda University
  Tokyo, Japan

End User Councils: Let Your Voice Be Heard

You can have a voice in the future of FOUNDATION fieldbus by participating in a Fieldbus Foundation End User Council (EUC). Regional EUCs, established worldwide, provide an open forum for the exchange of information about the application and development of fieldbus technology in a wide range of industries.

Current EUC locations include:

**Americas**
- South America
- United States
- Western Canada
  (Contact: americas_euc@fieldbus.org)

**Europe/Middle East/Africa**
- Europe
- Middle East
- Africa
  (Contact: emea_euc@fieldbus.org)

**Asia/Pacific**
- China
- Japan
- Singapore
  (Contact: asia_euc@fieldbus.org)

**Oceania**
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