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(For your convenience we have linked the above headlines to their respective pages. Just click the 'hot spot')



Ludwig Winkel (above left) and Roland Heidl (inset), who sit on IEC Standards committees on behalf of PI and contributed to this story

Updated PROFIBUS and PROFInet International Standards are completed and published.

After 3 years of hard but co-operative work on revisions to IEC 61158 and the new, **superior, IEC 61784-1**, both PROFIBUS and PROFInet are International Standards. In May 2003 the IEC member countries balloted unanimously in favor of the final drafts.

IEC 61158 series (Edition 3) specifies the Physical, Data Link, and Application Layer of seven different fieldbus systems for a broad range of applications and performance requirements. Included are: PROFIBUS and PROFInet; INTERBUS; ControlNet and EthernetIP; P-Net; FF H1 and HSE; WorldFIP; and SwiftNet.

The new enhanced and high quality edition of IEC 61158 series is properly structured in several parts based on the ISO/IEC 7498 OSI Basic

Reference Model in a homogeneous way. As the different fieldbus types include a range of selectable and configurable options within their detailed specifications, only certain restricted combinations of options will interwork correctly.

The recommended combinations of options are collected in the new **IEC 61784-1** "Profile sets for continuous and discrete manufacturing", which specifies PROFIBUS and PROFInet technology in different profiles:

- ▶ Communication Profile

3/1, which is compliant to PROFIBUS DP with the Physical Layer RS485 and optical fiber

- ▶ Communication Profile 3/2, which is compliant to PROFIBUS PA with the Physical Layer MBP, MBP-IS and MBP-LP

- ▶ Communication Profile 3/3, which is compliant to the basic communication part of PROFInet

'Profiles' mean that IEC 61784-1 lists the normative references to those Standards like IEC 61158 (Ed.3), ANSI TIA/EIA-485-A, ISO/IEC 8802-3.

The benefits gained from using a common and formal style to specify the seven communication systems are:

- ▶ The common look and feel of a specification saves effort during evaluation.
- ▶ The common OSI structure helps to identify and to specify common parts and contents.
- ▶ The common approach represents a first step to ensure long term quality and stability.

*continued on Page 2*

**IEC SC65C Committee members with the new Standards documentation. Center is Tom Phinney, Committee Convenor**



## PI NEWS

# NEW PROFIBUS STANDARD TO BE PUBLISHED IN CHINESE



With strong support from PROFIBUS International, Chinese PROFIBUS Organisation has been transforming the new IEC 61158-3 standard into the Chinese language. The first draft translation has been completed and after some amendments will be submitted to the Chinese Standards Committee for approval. It is expected to be

published by the end of 2004.



Recently, the Chinese PROFIBUS Competence Center has put great efforts into promoting PROFIBUS technology to Chinese developers. As a result, many more products are being made PROFIBUS compatible, with excellent results! For more information contact the Chinese PROFIBUS Test Lab: [tangjy@riamb.ac.cn](mailto:tangjy@riamb.ac.cn)

Find more Standards news at [www.profibus.com](http://www.profibus.com). Also, news about Seminars, workshops, training, exhibitions and conferences ... and many other important dates from the world of automation.

## PROFINet SRT/IRT are put to IEC

PROFINet communications are now part of the recently published Standards IEC 61158 and IEC 61784-1. At the end of May 2003, IEC SC 65C recommended a new work item on the topic of 'Realtime Ethernet', titled "Digital Data Communication for Measurement and Control: Profiles for ISO/IEC 8802-3 based communication networks in real time applications," which was distributed for voting to the National Committees.

The scope of the work item is a Real Time Ethernet (RTE) solution based on the International Standards ISO/IEC 8802-3 (including IEEE 1588) and IEC 61784-1. It can be met by PROFINet SRT and IRT. For end-users, the standardization of realtime Ethernet solutions is an important next step. Competitive products with compatible interfaces are guaranteed and can be the basis for interoperable components, thus limiting company-specific solutions.

PI, as a Category D-Liaison Partner of the IEC SC 65C, will actively support this standardization project. The National Committees have since voted in favor of the IEC proposal for RTE and an IEC Working Group started work at the beginning of September.

## PRODUCT GALLERY

### USB INTERFACE AND DTM GENERATOR

Pro USB from ifak system enables desktop PCs and notebooks to be made PROFIBUS stations within seconds. Windows 9x, ME, NT 4.0, 2000 and XP are all supported. The interface provides Master DP functionality (class 1 and 2) and DP-V1 (class 2). An API DLL allows integration into user-specific applications. ifak has also released the DTMcreator EDD, which can generate a DTM from an EDD.



ifak system: [ahe@ifak-system.com](mailto:ahe@ifak-system.com) or +49 3 91 54 45 63 60

### PROFIBUS AND ETHERNET SOC

Grid Connect has introduced the LX-180BP System-on-Chip (SOC), a complete chip and software solution in a BGA package. The LX chip is designed for embedded applications that require a high performance main microprocessor and Ethernet connectivity. Two serial and two CAN ports are included. A complete set of development tools is available or existing Intel 186/188, AMD 186/188, or NEC V25/40 code can be used. A PROFINet controller is under construction.



Grid Connect: [mikej@gridconnect.com](mailto:mikej@gridconnect.com) or +1 630 245 1445

### RS-485 TRANSCEIVER CHIP

SN65HVD1176 is a half-duplex differential transceiver with characteristics optimized for PROFIBUS applications. It meets the requirements of EN50170 and has a failsafe receiver for bus open, short and idle. It's also hot swap capable. The driver output voltage exceeds the PROFIBUS requirements of 2.1V with a 54 ohm load. The driver outputs and receiver inputs are tied together to form a half duplex bus port with one fifth load, allowing up to 128 nodes on a single bus.

Texas Instruments: [burak@ti.com](mailto:burak@ti.com) or +1 214 480 2264

## INTERNATIONAL STANDARDS ...

*Continued from Page 1*

► Missing parts and items of any specification are more readily identified by comparison to the other specifications, leading to a simplified review and evaluation procedure.

► The common OSI basis facilitates the development of test and certification procedures.

► Modular concepts support future enhancements, extensions and adaptation of new technologies.

PI has now moved its certification policy towards

the new IEC Standards in place of the former European Fieldbus Standard EN 50170 Vol.3, its Amendments, and several PROFIBUS specifications and guidelines.

Though expecting stability for the IEC Standards for 5 years PI has installed a maintenance group to work continuously on future editions of IEC 61158 and IEC 61784-1 in order to provide users with up-to-date and best quality harmonized communication solutions.

EN 50170 now may be considered for withdrawal.



## » APPLICATIONS

### UK/ WASTE WATER

United Utilities, water suppliers in the North West of England, have adopted PROFIBUS to network three waste water pumping stations feeding a treatment works at Soutergate in Cumbria. The distance between the pumping stations and the treatment works is up to 1 mile and the installation of cable would have been prohibitively expensive and time consuming. Also, high running costs ruled out the hard wired option so United Utilities opted to use a dedicated radio system operating in the licence free low power telemetry band. However, PROFIBUS presents some special requirements that cannot be met by a conventional narrow band radio modem so Radiodata's PB1000 interface module was selected because the modem/interface module is itself a PROFIBUS slave rather than just a communication device. This means that the PROFIBUS networks can operate at full speed, also that diagnostic information is available and fail-safe features can be applied.

Radiodata: [jjudd@radiodata.co.uk](mailto:jjudd@radiodata.co.uk) or [www.radiodata.co.uk](http://www.radiodata.co.uk) or 01376 501255



### GERMANY/ BLOW MOULDING

Round and square shaped PET-bottles as well as more complex and asymmetric containers can be produced by



seven different types of blow-moulding machines made by ADS. All the machines have been designed to the same modular layout and use the same PROFIBUS DP control system. Up to seven components, (three multi-turn absolute shaft encoders, one frequency converter and several heating units) are connected to an S7 control unit. Two

encoders are used as feedback devices during the transportation of the blank forms and final products. Another encoder controls the movement of the blast pipes when they are lowered into the mould cavities. PROFIBUS DP along with S7 control units and TWK encoders allow maximum flexibility when the machines must be adapted to different shapes and volumes. Machine outputs range from 2000 to 8000 units per hour for containers with capacities of up to 10 liter.

TWK-CONSULT: +49 211 63 20 67 or [n.schnitzler@twk.de](mailto:n.schnitzler@twk.de)

### ITALY/ BAGGAGE HANDLING



With an overall investment reaching 110m Euro, the new airport at Venice boasts unrivalled efficiency. The automation system accounts for 10 percent of the total and conducts all security procedures in addition to baggage operations.

The system has a capacity of up to 600 million passengers per year and 4000 luggage items per hour. It has 62 check-ins, six X-ray systems, 23 pushers, six bays, seven piers, five carousels, 550 geared motors and over 3,000m of conveyor belts!

After check-in, luggage undergoes automated and manual security controls before being conveyed to the flight pier. Bar code labels are read and flight destination details are checked. At the pier, luggage is manually bar code scanned to reconcile it with the passengers.

The system's control and command unit comprises fault-tolerant servers and high dependability PLCs in Hot-Standby redundancy configurations, connected by fibre optic cables into each zone. Ethernet control networks are also redundant. Four redundant PROFIBUS DP lines run from each pair of PLCs. ET200M remote peripherals run digital and serial signals to peripherals such as X-ray baggage control and ATR bar code scanners. The ET 200M peripherals also run a number of AS-interface subnetworks. The adoption of a solution based on using ground-breaking redundant PLCs and double bus PROFIBUS DP is a major advance in high-dependability automated processing.

**Siemens Dematic S.p.A.:**  
[maurizio.ghizzoni@siemens.com](mailto:maurizio.ghizzoni@siemens.com)

### IN PROCESS? CONSIDER THIS:

PROFIBUS continues to be the fieldbus leader, including in process automation. Market analyses show that:

- » **>9M PROFIBUS nodes** are in use today throughout industry
- » at least **250,000 PROFIBUS PA nodes** are installed in the process industries, the same number as our main competitor.
- » PROFIBUS PA devices dominate markets such as **Water/ Waste Water, Pulp/Paper, Food/Beverage, Chemical and Pharmaceuticals.**
- » Where a fieldbus is used in process, PROFIBUS devices are installed in **virtually ALL downstream and upstream segments**, independent of which fieldbus handles batch or continuous control.

## » AROUND THE WORLD

### FRANCE



In March, 50 persons attended a Safety Technical day organized by the France PROFIBUS Association in Megeve. The subjects presented included PROFIBUS itself, Safety, its evolution and standards and of course PROFIsafe. There was a presentation of PROFIsafe products, together with news of a PROFIsafe application from SEMER - the Megeve chair lift (pictured above).

Applicom, Bei Ideacod, Harting, Saia, Sepame, Siemens and Wago presented their products and services in the morning and in the afternoon participants visited 'La Princesse' chair lift at Megeve, which carries up to 2800 persons/hour. Also, France PROFIBUS has just published the 6th issue of its PROFImag (shown above).



### UK

PNO UK continues to drive forward with seminars, roadshows and training courses. Forthcoming attractions include 'Solving Process Problems with PROFIBUS', a new-style seminar showing how PROFIBUS can address key issues facing the process industry today, including asset management. Live demos and case studies

are included. The PROFInet Road Show will once more visit UK, on November 12th. Places are restricted - contact PNO UK to reserve seats. A Safety seminar in June attracted huge interest. Wolfgang Stripf (pictured) assisted in presenting the benefits of PROFIsafe.



### USA

Intensive PROFIBUS promotion is taking place in North America at present, based on email newsletters, web site sponsorships and a unique 'PROFideck' electronic product card designed as a "rich media experience that drives new customers to members' web sites". Click the pic for a demo, or contact [tonyn@nextcom.com](mailto:tonyn@nextcom.com)



### ITALY

The first Italian PROFIBUS DAY was held at the University of Brescia, Engineering dept. in June. The large audience included representatives of Northern Italian Societies and Enterprises who had the opportunity to update themselves on the PNI mission, strategy and, of course, PROFIBUS Technology, Profiles, Certification & Standards. Examples of successful applications within the Camozzi Group at Venice Airport and at ENEL in Pisa were described. Our picture shows ing. Maurizio



Ghizzoni, President of PNI addressing the audience. [Download the Italy presentations.](#)

### JAPAN

JPO's latest PROFIBUS Product catalog includes 153 products from Japanese companies and was first distributed at the DMS exhibition in Tokyo. It is available from [www.profibus.jp](http://www.profibus.jp) JPO received Non Profit status in July and is now a legal entity. Also in July, Mr. Kuester (Chairman of PI) and Mr. Christ (SAG A&D PT) visited for PROFInet seminars in Tokyo and Osaka. A PROFInet marketing meeting was also held. Engineers from the Netherlands visited Japan in July to help with the developers' seminar, which 16 people (two from Korea) attended. More and more companies plan to develop PROFIBUS devices and JPO says it appreciates the support and wants to continue good relations with Netherlands and Korea.



### NETHERLANDS

Dennis van Booma and Paulo Silva visited JPO in July to take care of lectures and demonstrations at the JPO developers' seminar. The test tool 'ProfiScript' was presented. The training boosted the knowledge and experience level of the engineers in the roadmap from product specifications to certification. In the second part of 2003 more training sessions will be organized in other continents Check: [www.profibuscenter.nl/ppd](http://www.profibuscenter.nl/ppd)

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