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## REMOTE I/O FOR PROCESS CONTROL COMES UNDER DISCUSSION



Remote I/O in Process Industry has been discussed with increased frequency lately and there is clearly a great need to share information.

On the 14th August 2002 the PROFIBUS Nutzerorganisation organized a discussion

round table for end-users and device manufacturers together, including reputed German magazines MessTec & Automation and CHEManager.

The PROFIBUS Working Group 'Remote I/O for Process Automation' presented the current status of the new PROFIBUS Remote I/O Profile. End users present included Infracerv, BASF and

Bayer. NAMUR General Manager Dr Hasso Drathen also attended. PNO member companies included ABB, CEAG, MTL, Pepperl+Fuchs, Siemens, Stahl, Turck.

Over 30 people were present and much was learned. The meeting proved to be a great opportunity to benefit from the collective experiences of both sides.

*The round table involved representatives from both supplier and end-user sides. Top right is Mr Dietz from Infracerv chatting with Mr George from Pepperl+Fuchs. Our top left picture includes Mr Drathen from NAMUR (second from right) sat next to PNO's Volker Oestreich (third from right)*

## NEW MARKETING WORKING GROUPS

The PROFIsafe and PROFIdrive solutions are being supported by two new working groups as follows:

▶ **PROFIsafe Marketing** - Chairman: Gerhard Mutter, Sick AG, [gerhard.mutter@sick.de](mailto:gerhard.mutter@sick.de)

▶ **PROFIdrive Marketing** - Chairman: Klaus Patzler, Danfoss, [klaus.patzler@danfoss-sc.de](mailto:klaus.patzler@danfoss-sc.de)

International presentations on exhibitions, publications and other marketing activities are now taking place to help the markets understand these technologies. Both Working Groups are open to all full members of PROFIBUS International.

## FIRST PROFInet COMPETENCE CENTERS EMERGE

PROFIBUS International (PI) has founded the first PROFInet Competence Centers, offering end-users and device manufacturers full support for the development of PROFInet devices.

PROFInet Competence Centers have comprehensive knowledge of engineering and distributed automation systems using PROFInet, including detailed knowledge of the PROFInet Runtime Software.

In seminars and workshops, Centers transfer knowledge about PROFInet and provide detailed information for developers/designers about porting and implementing the Runtime Software.

They are also an integral part of the quality assurance process, ensuring that only high-quality PROFInet products are introduced.

The new PROFInet Competence Centers are:

▶ ComDeC in Fürth, Germany. [ComDeC@fthw.siemens.de](mailto:ComDeC@fthw.siemens.de)

▶ ifak Magdeburg, Germany, [info@ifak.fhg.de](mailto:info@ifak.fhg.de)

▶ PROFIBUS Interface Center, Johnson City, USA, [ronald.mitchell@sea.siemens.com](mailto:ronald.mitchell@sea.siemens.com)

## » PI NEWS



# STANDARDIZING THE

## PROFIBUS PA FUNCTION BLOCK MODEL, AND EDDL

By Ludwig Winkel

PROFIBUS PA uses a function block (FB) model that is the basis for describing device profiles. **IEC SC65C WG7** (project number **IEC 61804-series**) specifies this function block model. (However, it should be made clear that the PA profiles themselves are not under consideration for standardization per se.)

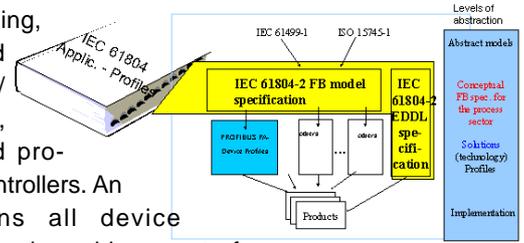
Part 1 is named **IEC/PAS 61804-1** *Function blocks for process control - Part 1: Overview of system aspects*. It summarises the requirements of end users and was the basis for part 2, which is entitled: **IEC/PAS 61804-2, Ed. 1: Function blocks for process control - Part 2: Specification of FB concept and Electronic Device Description Language (EDDL)**. The FB concept is in line with the abstract view of draft **ISO 15784-1** and **IEC/PAS 61499-series**.

**IEC/PAS 61804-2** contains a harmonised kernel of the electronic device description language (EDDL). Often used subroutines, so called 'Builtins', and profile selection tables used by certain consortia are placed in an annexe. The document is organised in an expandable way to include future technologies.

The specified language can describe:

- » device parameters and their dependencies
- » device functions, e.g. simulation mode, calibration
- » graphical representations, e.g. Menus
- » interactions with control devices

EDDL is used to create 'Electronic Device Descriptions' (EDD) which generate interpretative or compiled code to support parameter handling, operation and monitoring of I/O's, sensors, actuators and programmable controllers. An EDD contains all device parameter(s) and provides a set of scalable elements for handling simple, complex or modular devices. The EDDL is based on an ASCII format with clear separation between data and programs.



Compatible subsets are permitted using profiles. Three profiles are already specified by PROFIBUS, HART® Communication Foundation and Fieldbus Foundation®, though the differences between these profiles are minor.

The ballot for **IEC/PAS 61804-series** was completed in August 2002 with nearly all National Committees voting in favour. The next steps are a Technical Report for Part 1 and a Committee Draft for Vote (CDV) for Part 2, in preparation for an International Standard (IS) in about 1 year.

CENELEC is working in parallel with IEC on the same EDDL in **EN 50391**, though without FB. The estimated target date for a European Norm (EN) is December 2002. If **IEC 61804-2** becomes an IS without technical changes, then **EN 50391** will be withdrawn.

*More at <http://www.profibus.com/downloads.html> **EDDL Brochure - Draft.***

## » GENERAL NEWS

### DP-V2 TESTING

ComDeC has been authorized by PNO to test DP-V2 devices. Isochronous mode is fixed and Data Exchange Broadcast is under progress. [comdec@fthw.siemens.de](mailto:comdec@fthw.siemens.de)



### PCC/PTL MEETING



The 5th meeting of the PROFIBUS Competence Center (PCC), together with a meeting of the PROFIBUS Test laboratories, took place on June 19/20/21 in Reinach, Switzerland. Attendees learned about latest technical developments and presented their own projects.

### LOW VOLTAGE SWITCHGEAR

A new draft profile defines selectable data structures for cyclic data exchange on PROFIBUS DP for circuit breakers and starters. It includes the new standard I&M functions. Future editions will cover switches, overload relays, contactors, auxiliary switching devices, control and protective switching devices. The profile is in accordance with IEC 60947. Earlier profile versions for Low Voltage Switchgear devices were based on

PROFIBUS FMS and had been published as VDI/VDE 3689 and PROFIBUS Profiles 3.032 (draft). This version is based on PROFIBUS DP-V1 and is available for free download for members from [www.profibus.com](http://www.profibus.com).

Seminars, workshops, training, exhibitions and conferences... and all other important dates and news from the world of automation are listed on the PROFIBUS website. Just visit 'News & Events at [www.profibus.com](http://www.profibus.com)

## » APPLICATIONS

### GERMANY/ PROFIBUS ENCODERS TAKE CONTROL OF EXCAVATORS



One of the largest German open cast lignite mining areas is situated in the Rhineland to the west of Cologne. There, huge bucket-wheel excavators are employed by the Rheinbraun company, measuring up to 240 meters in length and almost 100 meters in height. They have a capacity of 240.000 m<sup>3</sup> per day.

For the first time since 1974 the analogue position control systems have been replaced by digital shaft encoders, supplied by TWK. Previously, data transmission was carried out by parallel lines using one wire for each bit. However, after extensive reliability tests the company decided to implement PROFIBUS DP instead.

Fourteen excavators along with their conveying and driv-

ing units are now being fitted with TWK multi-turn electro-optical encoders with PROFIBUS DP interfaces. They feature a total capacity of 25 bits with natural binary output and comply to the DP-Slave Class 2 Profile No. 3.062 for shaft encoders

The 65 mm dia case of the encoder comprises a 10 mm dia shaft with robust double ball bearings. It meets protection grade IP 66. However, because of the rough ambient conditions during summer and winter, and to withstand extreme mechanical stress, an additional cast iron housing is used to lodge the encoder and to ensure protective redundancy.

The PROFIBUS encoders offer quick reaction time, precise position pick up and a minimum of transmission lines. **TWK-Electronik:** info@twk.de · <http://www.twk.de>

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## » PRODUCT GALLERY

### CLEVER TEMPERATURE

GMC-Instruments has a new line of temperature transmitters built round a Camille Bauer ASIC-chip, which gives space and cost savings. The VK636 is a programmable transmitter for DIN B head mounting. A PROFIBUS A interface is coming. Low power means you can connect up to 13 transmitters to a single 61158-2 cable. **GMC Instruments:** [info@nl.gmc-instruments.com](mailto:info@nl.gmc-instruments.com) or [www.gmc-instruments.com](http://www.gmc-instruments.com)



### XP CARD

Woodhead Connectivity has announced a Windows XP driver for its PROFIBUS Interface Cards. Various computer bus formats are supported. The driver is available free-of-charge to current users from **SST:** [www.mySST.com/download](http://www.mySST.com/download)



### FISCO TERMINATOR

The Fieldbus Terminator serves a termination of a PROFIBUS PA fieldbus segment according to the FISCO model. There is a version for EEx i intrinsically safe segments and another version for 'flame proof enclosure EEx d'. The device is simply screwed into a free cable gland of a field device or junction box. **Pepperl+Fuchs:** [twesters@de.pepperl-fuchs.com](mailto:twesters@de.pepperl-fuchs.com) or [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com)



### WIRELESS INTERFACE

The PB1000 wireless interface uses a new approach whereby the modem/interface module is itself a PROFIBUS slave. As well as providing radio communications without reducing host network speeds, PB1000 provides information to the master about the radio link and allows 'fail safe' conditions to be set in the event of loss of communications. **Radiodata:** [sales@radiodata.co.uk](mailto:sales@radiodata.co.uk) or +44(0)1376 501255 or [www.radiodata.co.uk](http://www.radiodata.co.uk)

## ► FOCUS ON ... PROFIBUS COMPETENCE CENTERS



Endress+Hauser Process Solutions AG now has a PROFIBUS Competence Center (PCC) in Reinach, Switzerland. Officially accredited by the PROFIBUS User Organisation, its task is to perform system integration tests for process automation. It also undertakes interoperability tests in a multi-vendor environment using a defined PROFIBUS interface to ensure that field devices are fit for real fieldbus conditions. Other tests include interchangeability tests to ensure that one field device can be used as a replacement for another. PROFIBUS devices from several vendors are already tested by the PCC. Manufacturers like to make use

of this service, says E+H, because error-free PROFIBUS implementation is ensured from the development stage. The PCC staff are also responsible for training company service technicians in all aspects of fieldbus technology by means of accredited courses at Reinach and other sites. These courses are graded into basic, advanced and specialist and can be customized to include topics such as PROFIBUS itself, network design, performance calculations, network simulation and hands-on experience of planning, configuration, operation and troubleshooting with various host systems and system components.

## ► AROUND THE WORLD

*News from the Regional PROFIBUS Associations. If you have a report to contribute, please send it to the editor at the address given bottom right of this page.*

### USA

PTO tells us that a series of highly successful seminars was held in recent weeks, travelling around the country and visiting major industrial locations. For the future, PTO will have a big presence at the forthcoming ISA Show in Chicago, October 21-24. PROFIBUS DP, PA, PROFIsafe, PROFINet will be featured, and participants include Siemens, Endress+Hauser,



Wonderware, Foxboro, Woodhead, Softing, WAGO, Interlink and many others. Booth 1031 (see schematic above) will be 1500 square feet and will be co-located with the AS-Interface Trade Association. If you'd like to participate, email Mike Bryant (see address right).

### UK

More than 90 delegates at-

tended the PROFIsafe and PROFIdrive seminars in July. A representative from the HSE in UK supported the event and gave a presentation. Next seminars are planned for October focused on PROFIBUS in Process, and in November the PROFINet Road Show will be at the new TEAM trade Fair at the NEC.

Seminars, workshops, training, exhibitions and conferences... and all other important dates and news from the world of automation are listed on the PROFIBUS website. Just visit 'News & Events' at [www.profibus.com](http://www.profibus.com)

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