

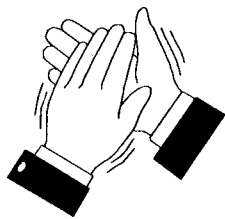


# NEWS

---

News letter for International P-NET User Organization ApS. 2/1992 November.

---



## INTERKAMA 92, Success for P-NET

The International Trade Fair INTERKAMA 92 in Düsseldorf was a success for the International P-NET User Organization.



The P-NET exhibition was a great success.

The stand was an "end of block stand" with 3 sides open. The total stand area was 112 sqm (8m\*14m). The stand was located in Hall 10, stand-No 10E49. The stand area was holding a common area and an individual area for each participating company. The common area was holding meeting rooms, bar, 2 small areas for showing video recordings of P-NET applications, and other common facilities.

Each participating company had its own individual area for showing products, applications, etc. The stand was built in a common way of identical white modules all with text in P-NET blue logo colour, and these modules were then

decorated by each company with their own company name, company colour, logo, etc. The stand was well designed and looked impressive as shown on the front page.



More than 300 interested end-users and/or future producers of P-NET components were visiting the stand. Furthermore, several journalists from the popular Magazines were visiting the International P-NET User Organization.

They were all impressed by the large number of installations, and the technical good solution. Many visitors to the stand were astonished that they had never heard about P-NET before.

---

P-NET features.



FEATURES

- ☛ Multi-master
- ☛ Multi-network
- ☛ High efficiency, up to 300 confirmed services pr. sec. (request **and** response)
- ☛ Diagnostic features
- ☛ High level language support
- ☛ Electrical standard • RS 485  
(physical layer) • IS 16  
• RS-232

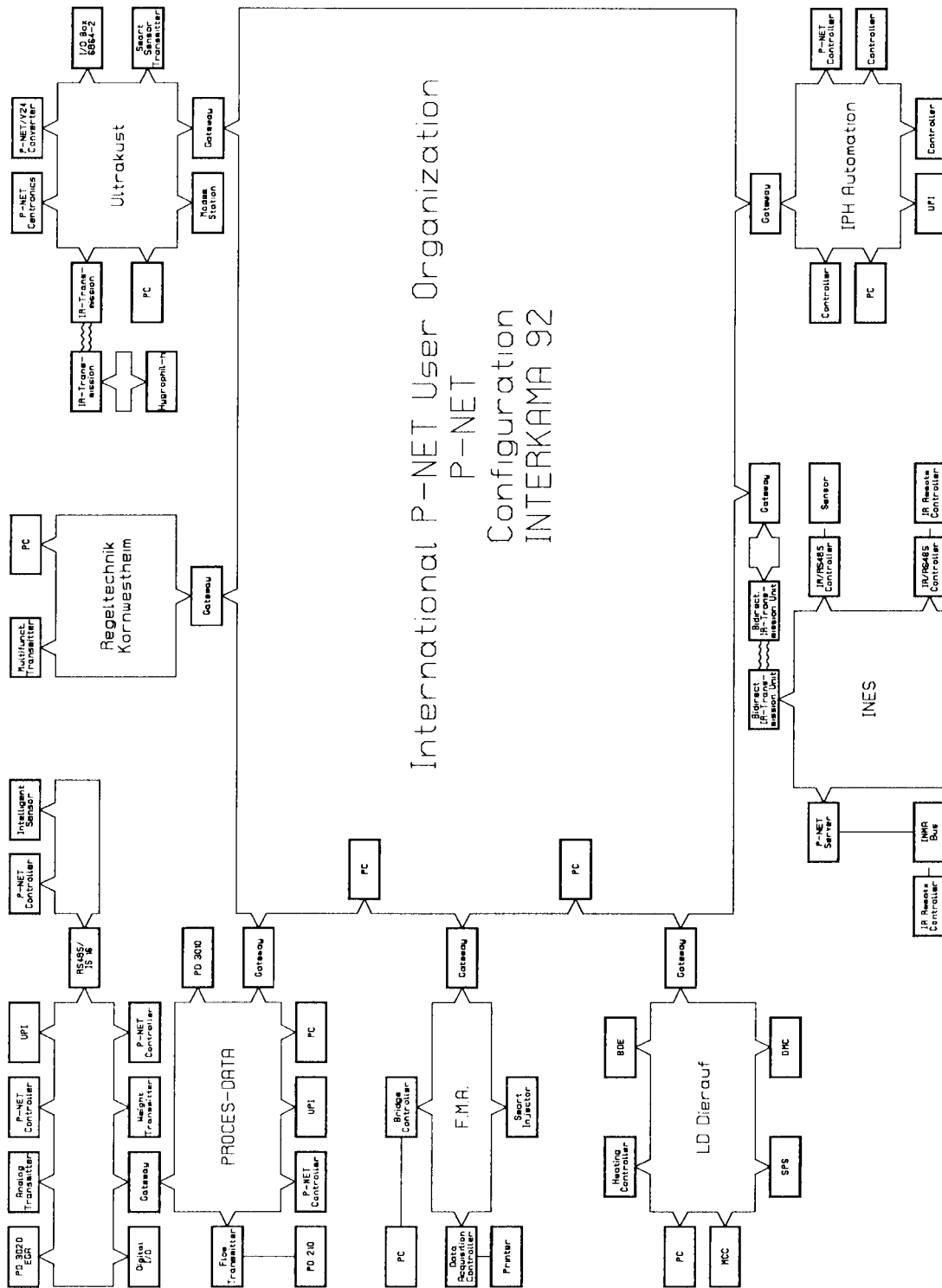
The International P-NET User Organization were invited to many conferences on fieldbus systems around the world.

The exhibition really showed the purpose of the International P-NET User Organization. The benefits of P-NET were illustrated in practise, and the purpose of exchanging equipment from different vendors in an integrated system were satisfied.

Individual P-NET modules from several vendors was connected together and work as a integrated system, and seen from the outside world as a unified whole. The total installation is shown on the next page. The figure shows the multi-master and the multi-network possibilities.

---

The exhibition also showed the transparent sending of messages between the bus-segments. Each of the participating companies had their own P-NET bus-segment, which were connected to the International P-NET User Organization bus-segment as shown in the figure on page 3.



**The P-NET Fieldbus configuration at the INTERKAMA 92 exhibition.**

**P-NET EXHIBITORS AT INTERKAMA 92:**

Proces-Data: Ole Cramer Nielsen, Carsten Nøkleby, Glennie Jensen, John Johansen, and Henrik Kristensen.

IPH Automation: Jan Østergaard, Hans Houllind, Jan Krigslund, and Per Hornsved.

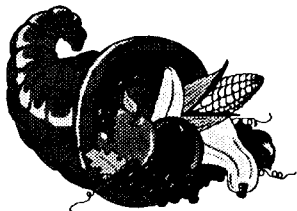
INES: Jari Sankala and Josef Femböck.

LD Dierauf: Ludwig Dierauf, Josef Warta, and Angelica Schuh.

F.M.A.: Chris Jenkins, Eric Leadbetter, and David Kay.

Regeltechnik  
Kornwestheim: Thomas Scholzen, Rainer Fischer, and Manfred Stossberger.

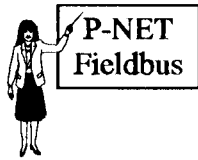
Ultrakust: Jörg Böttcher, Rainer Decker, and Josef Fromberger.



To keep us all energized the whole week Glennie Jensen (Proces-Data Silkeborg ApS) served us and the visitors, with coffee, lemonade, soda, beer, chips, and peanuts.

We all got our experiences in building-up an integrated stand, and we know what to improve for the next exhibition, but the P-NET Fieldbus really proved to be a multi-vendor protocol, and it was easy to build-up the P-NET configuration as given in the figure on page 3.

Concerning general information, it is worth mentioning the Local traffic in Düsseldorf. The traffic was terrible, because every morning and evening it was one long queue from the fair to the hotel, and it took approximately 1½ hour to drive 20 km to the fair and 1½ hour back to the hotel. The job at the stand was not an 8 to 4 job but we started at 7 in the morning and went on til 9 in the evening, 6 days a week.



## SYSTEC 92

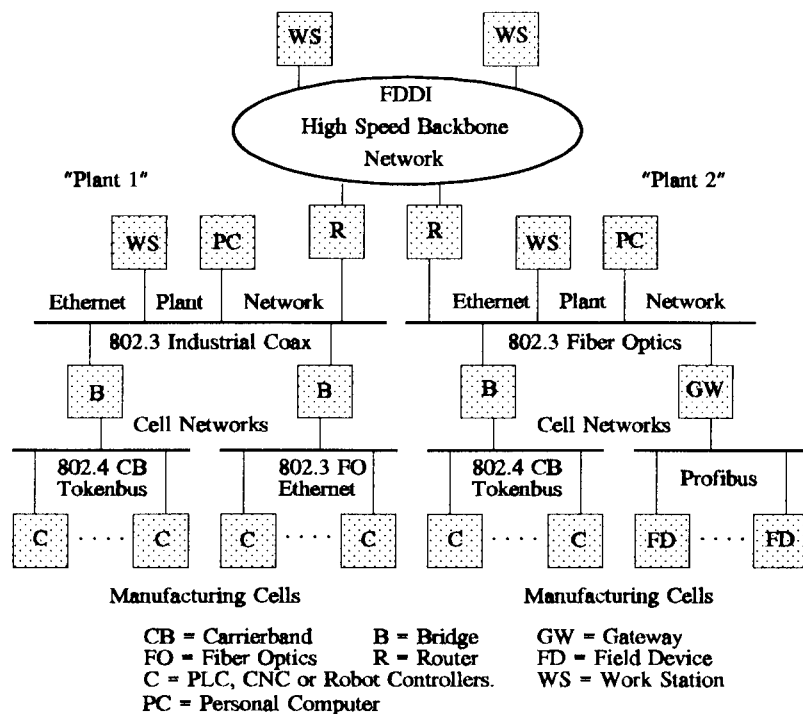
In connection with the International Trade Fair, SYSTEC 92 in Munich, Germany the European MAP/TOP<sup>1</sup> Users Group had arranged a 5 days' conference on interconnection of different networks, and especially MAP over Ethernet using Manufacturing Message Specification (ISO 9605). At the workshop: "*Fieldbus and MAP*", Dr. Carsten Nøkleby (Proces-Data Silkeborg ApS) presented a paper on the topic: "*The MMS implementation on the P-NET Fieldbus*".

At the workshop FIP and Profibus were also participating with papers.

At the conference even Siemens had to mention the famous P-NET fieldbus, and Klaus Indefrey (Siemens AG) stated that Profibus cannot cover all markets requirements, and in some environments the P-NET is already running and has a large market share.

The trend shown at the SYSTEC conference for the future: The FIP Fieldbus seems to have

serious problems in promoting the theoretically fieldbus, whereas Profibus are trying to capture a larger market. The audience got confused, because different Profibus representatives are defining the Profibus differently, on the individual layers within the Open Systems Interconnection Reference Model. At the moment, Profibus is focusing on integration of PLC (SPS) systems and large computer systems using part of the Manufacturing Message Specification

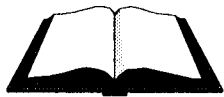


SYSTEC 92 Network Architecture

<sup>1</sup> MAP: Manufacturing Automation Protocol.  
 TOP: Technical and Office Protocol.

(MMS), whereas integration of sensors using MMS are shelved for a while. The audience also understood that P-NET was a well working Fieldbus with a large market share. Therefore, much interest was shown in the P-NET and the future development towards open communication systems using MMS. During the conference, Dr. Carsten Nøkleby distributed more than 100 copies of the P-NET brochure "*An overview of the P-NET Fieldbus*" and the material for the "*2nd International P-NET conference*".

There has been some confusion concerning MMS Software and Hardware products and the price level, but at the European MAP Users Group stand at SYSTEC 92, several vendors such as IBM, GE Fanuc, Allen-Bradley, Digital, and others, presented that MMS development kits at a price of 2000-4000 DEM. LD Dierauf Electronic GmbH was also participating at the SYSTEC 92 Trade Fair with a stand in hall 14 where a Data Acquisition system using P-NET were shown.



## P-NET Catalogue

At the International Trade Fair INTERKAMA 92 the International P-NET User Organization showed a draft proposal of a P-NET Product Catalogue. The Product Catalogue contains an overview of hardware modules, software modules, software tools, and P-NET courses.

Please let the  
International P-NET  
User Organization  
know about your  
P-NET products,  
new as well as old,  
to update  
the Catalogue.

The International P-NET User Organization are now working on the 1st edition of the Product Catalogue, and it should be available for the 2nd International P-NET conference in Deggendorf.

All members will receive one copy of the catalogue by mail. The International P-NET User Organization intends to update the Catalogue successively, and therefore it is necessary that every vendor of P-NET modules, software or courses, sends information to the Organization for each individual new product or course.

The International P-NET User Organization can offer you special application forms for P-NET modules, Software modules, Software tools, and Courses.

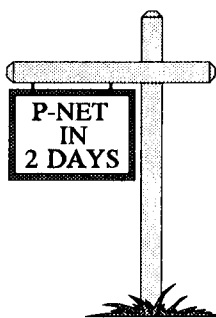
It is important to get feedback from the P-NET vendors, concerning changes or addings to the 1st edition of the P-NET Product Catalogue. Please do not hesitate to contact the International P-NET User Organization.



## P-NET Application video

In the P-NET News 1/1992 July it was announced that the International P-NET User Organization have produced a video, presenting 10 different installed P-NET applications throughout Europe. In July 1992 the video was only available with German speak, but now the video is also available with English speak. The video, VHS type, is distributed via the International P-NET User Organization at a price of DKK 320,-.

P-NET Video  
ready with  
English speak



## P-NET Conference in Deggendorf

Following the successfull path given by the 1st International Conference held last year in Silkeborg (Denmark) this meeting should be a forum for discussions between producers and present or potential users of P-NET.

Meanwhile, P-NET has become a stable fieldbus standard internationally used by many companies. Worldwide more than 2,000 P-NET installations are in function.

The lectures to be delivered at the conference were chosen under the prerequisite of the most practical benefit for the audience. Therefore, a high number of the lectures deals with available P-NET products or working applications.

## **P-NET** NEWS

Additionally, some basic lectures about P-NET fundamentals and actual works will be delivered.

The main contents of the lectures is: Actual developments, applications, software for P-NET modules and software tools. Finally is there an excursion to Ultrakust Electronic, where the P-NET based Building Control System will be demonstrated.

The invitation is distributed to more than 500 potential end-users and/or upcoming vendors of P-NET products.

### **P-NET EXHIBITION**

Besides the conference there is a possibility to see a small exhibition. This exhibition was arranged by several companies delivering P-NET products or system solutions. Here the visitor can get an impression of the various devices and tools which he can - in contrary to many other fieldbus systems - really buy.

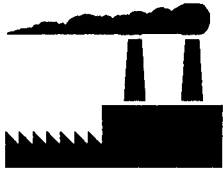
The following vendors will show some of their products:

Agrosoft (Denmark),  
D.A. Elektronik (Germany),  
Fachhochschule Landshut (Germany),  
F.M.A. (Great Britain),  
Frako (Germany),  
IPH Automation (Denmark),

2nd International Conference  
on  
P-NET Fieldbus System  
Nov. 30 / Dec. 1, 1992  
Parkhotel Deggendorf  
Deggendorf  
Germany

LD Dierauf (Germany),  
Pontis (Germany),  
Proces-Data Silkeborg (Denmark),  
Ultrakust Electronic (Germany),  
Velox-Automation (Germany).





## **IPH applies P-NET at Refinery in Ukraine**

After 2 years' sales efforts IPH AUTOMATION A/S has succeeded in getting an order for 2 tank monitoring systems for refineries in Ukraine.

The largest tank control system has been developed for contents measurement and supervision of 73 tanks - each containing up to 20,000 m<sup>3</sup> - and for control of valves and pumps.

For this purpose there will be 6 local P-NET with P-NET controllers which communicate in a common net running to a central control room from where all functions can be controlled.

The completed system includes appr. 85 PD 3100 interface modules for valve control. These modules together with the necessary equipment will be built into panels to be placed over an area of 2 km<sup>2</sup>. The total length of the P-NET is 20,000 m.



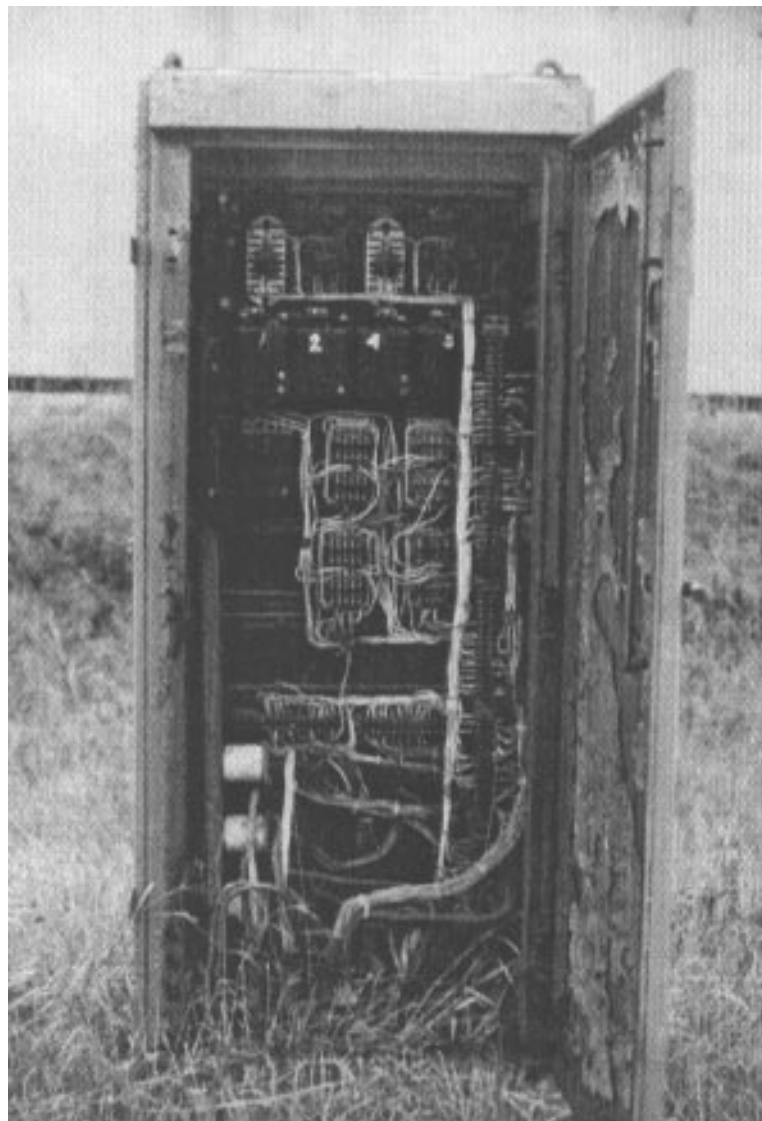
An overview of the tank farm at Lischansk Refinery

The refinery requires the whole operator interface, display texts, etc. to be with cyrillic text. To convert the system language IPH employed a Russian electronics engineer already one year ago, and the language conversion is now completed.

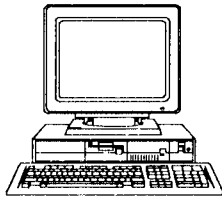
The tank control system is supplied for inventory control and custody transfer of oil products, requiring a very high accuracy of the measured contents, and for this purpose Saab Tank Radar was chosen. The tank radars are inter-connected through a 2-wire RS 485 communication network with Modbus protocol. IPH has developed a gateway for communication between Saab tank radars and the P-NET.

In addition to this large refinery, IPH has delivered automation equipment operating with P-NET to other refineries, several dairies and a biogas plant, all placed in Ukraine.

The total order amounts to more than 2 mio. US \$.

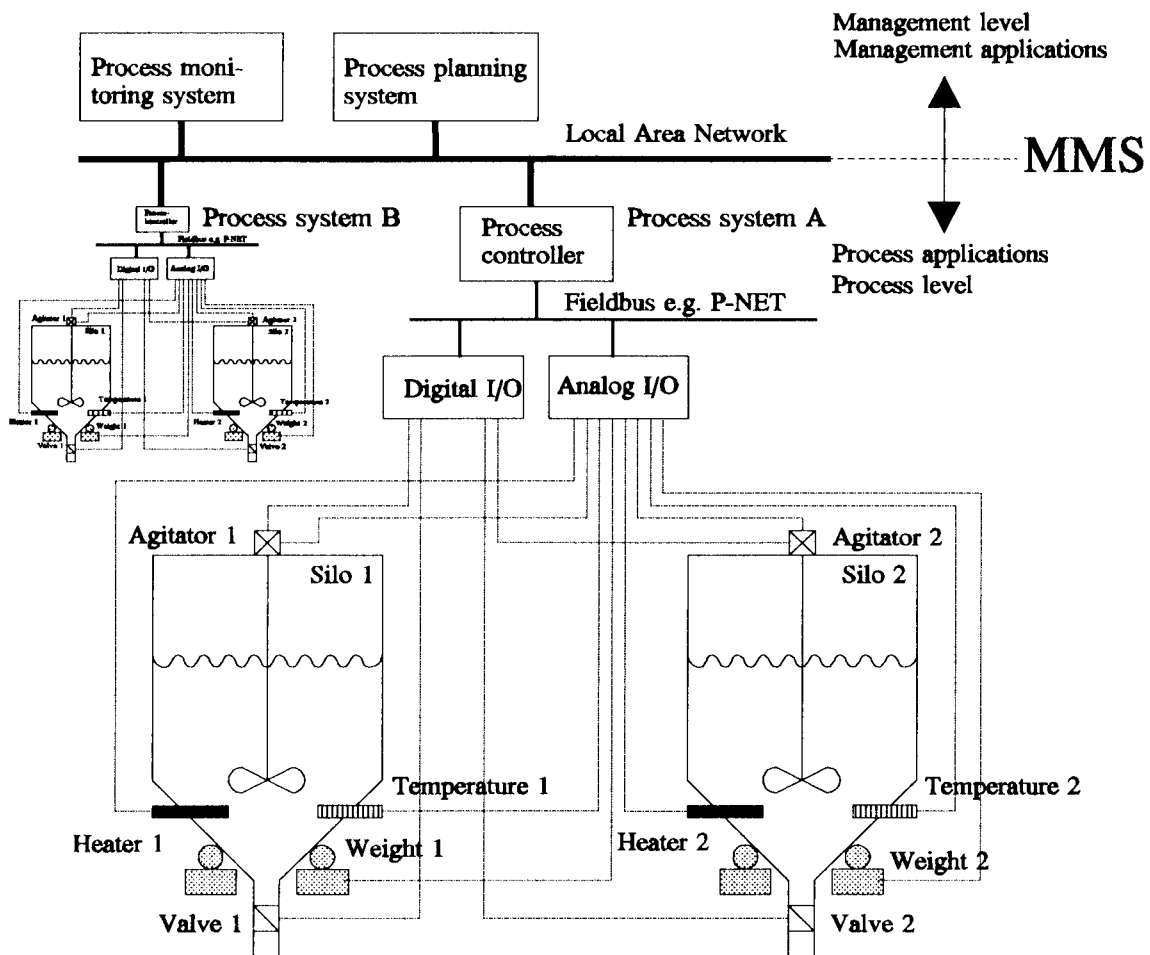


Example of an existing and working pump/valve control panel, which IPH has to replace by new panels.



## Towards Open Communication Systems

Manufacturing Message Specification (MMS) is a general and standardized communication language between applications on the factory floor. Manufacturing Message Specification makes it possible to write an application program, that is flexible in relation to the chosen network.



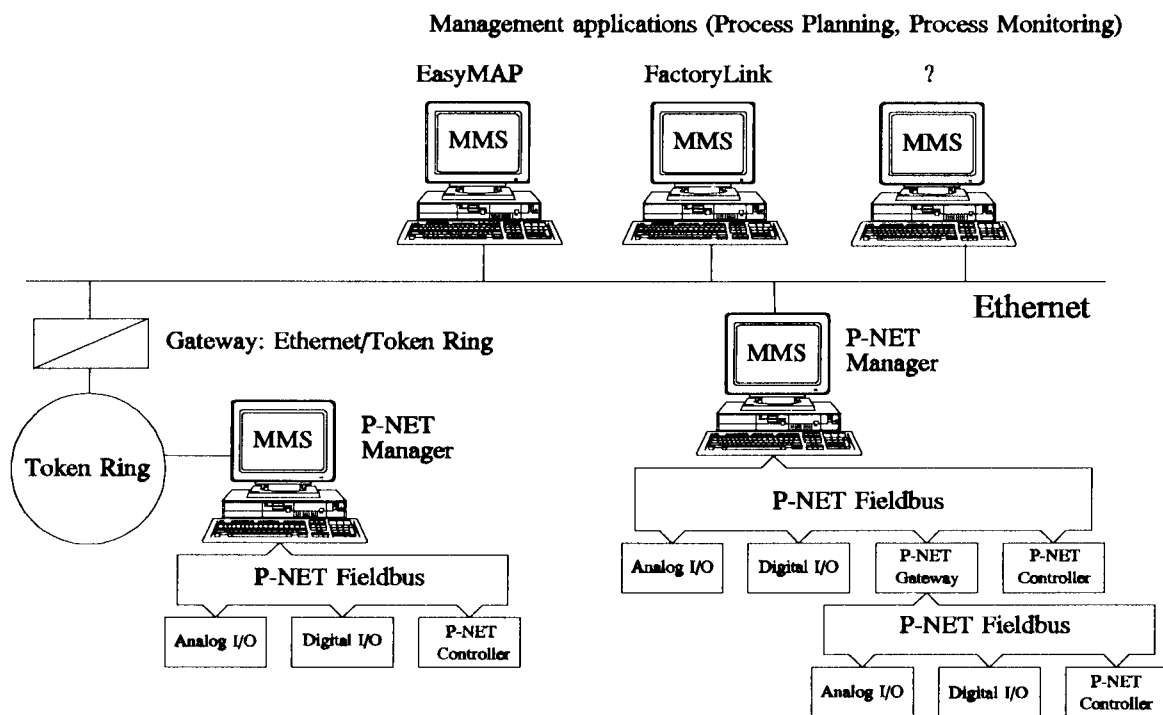
The environment for MMS.

The MMS concept is used on the upper level within a process automation system, i.e. between management applications (Process monitoring, Process planning, etc) and the process system for task-to-task communication, see the figure above.

## P-NET NEWS

A national interest group in MMS is established in Denmark, and it is decided to develop a test demonstration to show the benefits of MMS in relation to integration and flexibility of applications and network types.

**Members:** Brodersen Teknik, Vinther Buus, Procos-Data Silkeborg, Elkraft, Procos, Slagteriernes Forskningsinstitut, Dansk Teknologisk Institut, the Engineering Academy of Denmark, and the Technical University of Denmark.



MMS test installation.

**Task:**

- \* Describe the principles within the MMS concept, with the purpose of distribution of information about MMS. Get accept of the MMS principles.
- \* Examine the available MMS software.
- \* Describe an application suitable for demonstration of the benefits and drawbacks of MMS.
- \* Build-up an MMS application.
- \* Develop a course in communication using MMS.
- \* Evaluate suitable applications within Danish industry for MMS.

The test demonstration is illustrated in the figure on page 12, and as illustrated it is obvious that the P-NET can be connected to different networks (Ethernet, Token Ring, MAP) and different applications (EasyMAP, Factory Link, customer designed applications).

The MMS makes it possible to write only one gateway to the P-NET Fieldbus, that is suitable for different Local Area Networks (LAN), as well as applications.

Local Area Networks are normally known from the office environment for sharing printers, plotters, file servers, etc.

Using MMS as the language between other networks than P-NET, it is possible to build-up one P-NET segment in one end of the factory, and another P-NET segment in the other end of the factory, and then connect these segments together by a Local Area Network. By using the Local Area Network already installed and the communication language MMS for exchanging P-NET messages the costs will be reduced. Furthermore, it will be possible to connect other applications together in a standardized manner.



## P-NET Brochure

During the INTERKAMA 92 exhibition, the participants of the International P-NET User Organization stand collected their experiences when discussing with customers, and made a layout to the new P-NET Brochure: *"An overview of the P-NET Fieldbus"*.

The exhibitors realized that general information concerning P-NET was needed, and it resulted in the issue of the new P-NET brochure.

The first release was made for the SYSTEC 92 Trade Fair 20th - 24th October, but small changes has been made in the final description now available. All members will receive a copy.



## News from the UK section

The International P-NET User Organization were represented at the 'Fieldbus 92' Conference during November in London, and exhibited examples of P-NET fieldbus communication.

A number of papers were given on the various fieldbus protocols being designed or on trial. However, there seemed no doubt that some attempts at a single or world standard will be difficult to achieve, and will take a significant time to come to fruition. Some authors expressed a view that, realistically, a few of the better fieldbus protocol standards will eventually live side by side.

As far as P-NET was concerned, it is believed that this was the only fieldbus able to boast over 2000 applications and has been a standard for the last five years.

Considerable interest was shown in the concept of the P-NET IS16 intrinsically safe enhancement, since many industry sectors either need this facility or it could prove more cost effective.

The International P-NET User Organization will be taking a stand at the Control & Instrumentation Exhibition, National Exhibition Centre, Birmingham on 25th - 27th May 1993. A number of P-NET users and manufacturers will be participating.

Chris Jenkins.



## Editorial

P-NET NEWS is planned to be published 3-4 times a year and the next edition of P-NET NEWS will be published at the beginning of next year.

John Johansen, Proces-Data Silkeborg ApS, Denmark is the editorial administrator of the news letter.

The International P-NET User Organization would like to encourage the members to contribute with papers or articles for the **P-NET NEWS**. The papers can be any information on existing P-NET systems, P-NET projects coming up, or any other interesting information concerning the P-NET fieldbus system. The materials can be mailed to the organization or to either of the BBS systems.

The success of the **P-NET NEWS** is very much relying on **YOUR** contribution to the editorial contents.

One of the intentions with this news letter is to create a correspondence column which can be used for P-NET problems, hints to applications or implementations, your wishes for new modules etc.

**P-NET** NEWS

Published  
by:

International **P-NET**  
User Organization ApS  
*P.O.Box 192 . 8600 Silkeborg . Denmark*

Editor: John Johansen

P-NET News is published 3-4 times a year and is mailed to all members of the International P-NET User Organization ApS.

Bulletin Board System: DK phone +45 86 81 30 10 (24 hour service)  
Bulletin Board System: D phone +49 9929 30140 (24 hour service)  
The modem characteristics: Baud rate:300 / 1200 / 2400 / 4800 / 9600  
Databit: 8, Stopbit: 1, Parity: None.



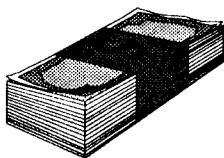
## New members

Since the last distribution of the members list, additionally 7 companies have joined the International P-NET User Organization:

D.A. Elektronik GmbH, Germany  
Epson Deutschland, Germany  
Ahrens+Bode GmbH, Germany  
Ultrakust, France  
Institut für Messtechnik, Germany  
Institut für Prozessmesstechnik und Elektronik, Germany  
Danfoss A/S, Transmission Division, Denmark

We would like to welcome these companies.

The members list is found on the Bulletin Board System. The list is updated each month.



## Price List

Below is a list of manuals and videos that are available from the International P-NET User Organization. The table below contains the manual, number of copies received, and the current price (1993) in Danish Krone (DKK). The price list is valid for members of the International P-NET User Organization only.

Information	Number of copies	Price (DKK).
Video, German speak.	1	320,-
Video, English speak.	1	320,-
P-NET Catalogue	1	100,-
P-NET Standard	1	100,-
P-NET Brochure	15	100,-