ODVA
Open DeviceNet Vendors Association
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Newsletter of the ODVA New Zealand Australia User Group Inc.

## Contents



*Sharon Bruderer: Anchor News*

# Major Anchor Project runs on DeviceNet.

The recently commissioned Anchor Products Milk Powder Drier 5 has the largest installation of DeviceNet in Australasia.

DeviceNet has been used extensively throughout the project for all devices including the milk reception and treatment, the drying process, powder handling, and the waste treatment system.

With a node count of just under 2000 across several contracts replacing traditional Inputs and Outputs this was a major undertaking in the short construction period.

The use of ControlNet and DeviceNet on the project was a new experience to many in the installation teams, but the project was up and running on time thanks to an extensive training effort.

The majority of the hardware for the project was contracted to MBL Ltd, and the software to ODVA NZ member CSE NZ Ltd of Hamilton.

# Hands On Training at Manukau Institute

*Brian Collins of Electrical Importing Company giving hands on training for the NetSolver Software.*

*(Continued on page 4)*

# ODVA Australia

ODVA Australia User Group has now been in operation for 12 months, and in this time has had a major impact on the Automation market in the region.

The multi-vendor displays at trade shows have attracted a lot of attention and won the Stand of the Show award at ICEX 1999 in Melbourne.

With a growing membership, and increased awareness of the need for open systems, the user group provides the necessary support for users and vendors alike.


Award winning Display at ICEX 1999 in Melbourne

*John Dooley - Omron, Graeme Meyer - facilitator, Jim McPherson - Micromax, Ross Vaughan - Rockwell Automation, Graeme Sexton - Fisher & Paykel.*

# ODVA Korea

ODVA Korea was launched in July this year, and the Korea Instrumentation and Controls Association (KICA) was chosen to administer the organisation.

KICA is supported by the Korean government to promote training of process and manufacturing engineers and operators and is an affiliate of the USA based Instrument Society of America.

The establishment of a centre of excellence laboratory with products donated by members will be used to provide training programmes and seminars for integrators and end users.

The translation of the DeviceNet Specification and newsletters into Korean is a priority for the organisation.

# ODVA China

ODVA China will be established early in 2000 and be over seen by the Shanghai Apparatus Research Institute (SEARI).

The growth of the ODVA and DeviceNet into Asian regions is a result of the adoption of the technology by industries important to these regions.

# DeviceNet Bus Monitor Just Released

The ODVA has just released the DeviceNet network monitor, a small, bus-powered tool that performs various physical layer diagnostics and monitoring functions.

The network monitor is completely passive, does not require a MAC ID, and does not interfere with bus traffic.

The device will;

- Detect shorts between CAN lines and power supply lines
- Monitor power supply voltage levels and indicate high or low voltage conditions
- Auto detect bus speeds and indicate 125, 250, 500 kbps
- Monitor bus traffic and identify Group 1, Group 2, Group 3 and Group 4 traffic
- Detect and indicate error frames

The DeviceNet Tester can be ordered by downloading an order form from the ODVA website www.odva.org

# Waikato Polytechnic Training update

The Waikato Polytechnic has continued to provide training courses for the ODVA throughout 1999. There are several courses planned for the year 2000 and details and dates are listed on the training section of www.odva.org, or

contact Simon White at
Phone (07) 834 8834
Fax (07) 838 0707
email ecskw@twp.ac.nz


*Peter Tait (TCS), Richard Murton (PDL), Edwin Russell ( F&P) discuss the finer points of DeviceNet on the ODVA display at Control '98*


*Podiums from several ODVA companies displaying products that all connect to DeviceNet. Nick Ramsden of Keystone explains the features of a Keystone DeviceNet valve to a stand visitor.*

# ODVA Displays Are Trade Show Success

The display at last years Control '98 and other trade shows in the past year, were well received by users of automation in New Zealand who wanted to know more about DeviceNet technology, and also look at recently released products from ODVA NZ members.

There was a lot of interest in the New Zealand developed products which had been manufactured in response to demand from New Zealand Industry.

The Multi-vendor display has been one of the features and this will be repeated at Control '99 at the Ellerslie Racecourse where the display can be found on stands 49 to 53.

# ODVA On The Web

The ODVA has listened to the users of the ODVA website and redesigned the site to provide easier access to important DeviceNet information.

There are several downloadable files on the technology and use of DeviceNet as well as the site being used as a repository for EDS files and other engineering information for DeviceNet products.

Events in New Zealand and copies of this newsletter can be viewed from the www.odva.org site.

# ControlNet to Foundation Fieldbus Linking Device

This innovative device from Rockwell Automation allows users to easily send data between H1 Fieldbus and Devices on ControlNet. It also permits configuration of all Fieldbus devices from a central PC anywhere on the ControlNet network.

The ControlNet to Foundation Fieldbus Linking Device acts as a bridge for I/O, data acquisition, and configuration data, translating variables from Fieldbus format to ControlNet format, and vice versa along with Fieldbus status information.

The linking device then sends the translated Fieldbus Data to controllers, HMI and other operational devices on the ControlNet network while sending similar ControlNet data to the Fieldbus devices.

The Linking Device comes with a powerful configuration tool which provides all the Fieldbus configuration capability and flexibility available to a configurator connected directly to each Fieldbus - all via the ControlNet Network. The configuration tool is capable of Function Block details, scheduling, and adjustment of minute details in the node timing schedule.

# Manukau Institute of Technology Open Day


*Richard Nowak of Fisher & Paykel sets up the display for the ODVA Open day.*

The launch of the DeviceNet Open Day at the Manukau Institute Of Technology was the beginning of the planned DeviceNet training programmes being offered by their Electrical Engineering Department.

Representatives from various industries took the opportunity to learn more of the technology, and discuss products and technical issues with ODVA companies.

Presentations given included;
DeviceNet Technology by Dave Forsyth of MIT, DeviceNet for a Processing Advantage, and DeviceNet Product Development by Peter Tait of Tait Control Systems.

*Group3 Displays their Compact Multifunction I/O module with DeviceNet connectivity.*

*Keith Gleadhall of Rockwell Automation discussing product technicalities with Peter Dalgity of Anchor Products.*

## The role of Ethernet

A White paper has been prepared on the future of Ethernet and the positioning this technology in factory Automation. This paper is due to be released and is available on request from the ODVA.

The object is to combine the benefits of Ethernet's' acceptance in the market and speed with the determinism and support from a large number of vendors as found with DeviceNet.

It has been recognised that any network using Ethernet as a transport medium has no way of ensuring that different vendors and technologies can share the same medium of Ethernet without purchasing products from one source.

The ODVA has spent a considerable amount of time addressing this situation and has found a solution that future proofs the technologies beyond new technologies such as Ethernet.

# Facilitator's column

The rapid growth of the use of DeviceNet in New Zealand over the past 12 months has confirmed that it is a technology that is being taken seriously by New Zealand Industries. This has also resulted in the development of new intelligent products designed to offer more advantages to processing industries and machines alike.

The need for education and training continues to be the main issue and good training cannot be recommended strongly enough as most issues that arise are a result of the incorrect setting up of a Network.

My involvement in the establishment of ODVA organisations in the Asia Pacific region has meant a focus on industries not seen in New Zealand, but these experiences are all helpful to advance the technology and ensure that New Zealand Industry can produce products and machines that will be suitable for these regions.

The ODVA training courses provided by the Waikato Polytech have given several companies the confidence to adopt DeviceNet technology and has also assisted in making several projects successful thanks to well trained installation teams.

With the growth of the use of DeviceNet in the Auckland region the Manukau Institute of Technology has also become an ODVA DeviceNet training providor with their first course completed recently.

More training courses are planned for next year by both organisations.

With several major industries installing DeviceNet systems there are some new opportunities for companies who are willing to commit themselves to gaining the skills required to design and commission DeviceNet networks.

***Graeme Meyer***

# PDL Drive Gets Approval

The PDL Electronics range of Variable Frequency Drive products have recently been approved by the ODVA independent conformance Test laboratory as having passed the ODVA conformance test.

This test ensures that DeviceNet products can be connected to the network and both the protocol and physical layer components are designed to the DeviceNet specification.

As multi-vendor installations become more common the use of conformance tested products becomes more important.

DeviceNet™ CONFORMANCE TESTED

# Omron

The E5EK- AA2-DRT is an advanced digital process controller from Omron with selectable inputs for Thermocouple, RTD, analog current and analog voltage.

The controller also has a wide selection of output options, and a choice of standard/ heating/cooling configurations. FUZZY self-tuning, or two auto tune modes are available, making it a very versatile unit.

All parameters are accessible via DeviceNet, including ramp control and highspeed sampling.

The E5EK unit has IP66 protection for use in the industrial environment.

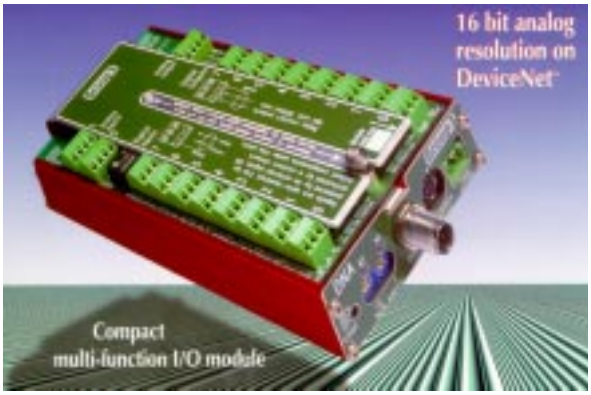
# Group3

The release of the Group3 DNA DeviceNet I/O module offers 16 bit analog resolution on DeviceNet, and gives increased options for interfacing to analogue devices.

The compact multifunction I/O module has 1 Analog Output, 2 Analog inputs, 8 relay contact digital outputs and 8 opto-isolated Digital Inputs.

The DNA module has been designed for high noise immunity and has an embedded PID algorithm for closed loop control.

The baud rate is externally settable to 125k, 250k, or 500k baud. The MAC-ID address is also externally settable using two external rotary switches.




The unit comes with full "Parameter Object" implementation with 88 parameters accessible. It has a DeviceNet power draw of 50mA and connection is via a micro style connector.

# ECANZ Christchurch


*The Annual ECANZ Electrical show was a great opportunity for ODVA members to display the wide range of DeviceNet products.*

## SMC New Product

SMC has extended its range of fieldbus equipment with the introduction of a new, integrated serial interface unit, the EX240, offering up to 32 sensor inputs and 32 solenoid valve outputs.

Rated IP65 and CE compliant, the EX240 is supplied as an integrated assembly comprising a digital serial interface (SI) and a user-defined number of solenoid control valves pre-mounted on a manifold. The integrated design eliminates the need for the user to instal wiring between the SI unit and the valves, enhancing the reductions in wiring, installation time and maintenance.

The new SI unit accomodates the DeviceNet communication protocol. PNP/ NPN sensor input switching, applicable to 2 or 3-wire inputs, is built in and can be performed directly on the unit.

The device also incorporates self-diagnostic functions that include monitoring of solenoid valve voltage and sensor power supply over-current cutoff, with status information sent to the master PLC.


*Joe Carter from SMC proudly looking after the display at the Dairy Technology Society Annual Conference.*

## Tait Control Systems Enters A New Era

While the rest of the world is pondering the pro's and con's of new technology New Zealanders are hard at work implementing it and planning the second generation of developments.


TCS has seen another amazing technology adoption in New Zealand with product sales in DeviceNet leaping by 400 % in the 1999 year. Projects for the 1999 year are made up of 85% distributed I/O and 15% discreet I/O where in 1998 only 20% of installations were DeviceNet controlled.

It is now becoming apparent that both systems engineers and large automated plants are seeing the real worth of adopting a smart field network over a dumb network or discreet control. Those who were brave enough to start early and absorb the learning curve have now positioned themselves well for the next wave of automation.

Once you have adopted an intelligent bus system you can utilise the intelligent products that are coming on the market that will provide tight process control in the field and the PLC becomes more of a supervisor.

The main TCS focus is to provide products that are simple to configure and require little or no PLC programming, having the product doing all of the heavy number crunching and presenting the information back to the PLC in a format it works well with.

Smart dynamic DeviceNet Bus I/O with Intelligent PID loop controls, Rate and Positional control (with speeds up to 10,000,000 pulses per second) will provide smooth control capabilities out in the field, but still accessible to the host for overall control.

Serial interface modules are also evolving to allow those who are unfamiliar with communications protocols to create their own simple link without having to write a single line of high level code. A new range of IP65 rated modules are now available for harsh environments.

## Contact us at

*www.odva.org*
***Or***
*ferrnbrook@wave.co.nz*
Ph +64 7 5711184
Fax +64 7 5780211
***Or***
ODVA NZ / Australia User Group Inc
P.O. Box 41
Tauranga
New Zealand