



Fardux

ISSUE 09

# COMMS COURIER

## CONTENTS

ADIPEC 2013.....	2
Production Well and Integrity Monitoring.....	3
Wireless Data Acquisition.....	5
Fardux WirelessHART.....	5
Fardux Timebase.....	6
New software release.....	7
Web-based training.....	8
Data Acquisition training.....	8
People News.....	9



## Innovation with quality

Since the last quarter of 2012 we have been heavily involved with new product developments and enhancements to existing offerings. Actually, for Fardux R&D is really our perpetual home territory and it's something that never comes to a standstill – it's just that this year in particular we have been particularly active in this arena. This issue of the CommsCourier unveils further developments and releases of both new hardware and software offerings for new and existing products.

Technology in our environment has to be tried and tested, and proven to be suitable for purpose and not just the latest gadget or gismo that is actually little more than a transmission system. Of course, it's important to constantly strive for new technological solutions to provide a

more efficient delivery of data from the well site instrumentation to local storage analysis servers and beyond via the web to remote stations.

It is equally important to remember that it is the data that is the most important factor in the equation and not the transmission system. At Fardux, we consider that we are in the data business first and foremost, with accuracy, resolution and reliability being highest on the list of priorities.

Since 1990, our client community has come to expect a delivery of quality from Fardux and we continue to abide by our principles and high standards. Fardux product are very much recognised as the product range of quality and properly thought through technical engineering. These principles are important to us and we



# ADIPEC 2013

**Fardux Middle East began operations in March 2012. By November of the same year we exhibited at the largest Middle East oil and gas exhibition and conference, ADIPEC. With over 1,600 companies exhibiting across 12 indoor halls, the four day event attracted over 300 speakers to the technical programme alone.**

ADIPEC has grown from strength to strength over the years and is now an annual event and Fardux Middle East is once again pleased to confirm our presence.

With a larger stand in the main hall, we hope to see not only our regular customers from the region but also those from further afield, in addition to making many new contacts.

As usual, we shall be showcasing our array of products and services. Our leading data acquisition software, for



example, has some great new enhancements and our hardware also includes a number of new and exciting additions.

*ADIPEC 2013 will run from 10-13 November 2013. Please drop by and have a chat; we will be in Hall 4, stand 4344.*

## ← Continued from page 1

will never compromise quality for the sake of introducing new technology.

**T**his all said, we have been able to rollout some new and existing Fardux product ranges and enhancements during the last quarter and still more to come between now and the end of the year.

During October we will also be going live with the first phase of our new web site. It is somewhat overdue but we are pleased to be moving this platform forward and into the future.

In recent months we have also been involved with various

manufacturers and service companies on new metering solutions including coriolis, sonar, v-cone and acoustic measurement systems. To a point the jury is still out on some of these technologies, although we continue to work with our community partners to push forward with the quest for fit-for-purpose innovation.

In 2014 we are intent on putting more effort into providing in-house training courses and an increased confidence from our clients in the course calendar being adhered to without cancellation. In the past we

have only conducted courses when sufficient minimum numbers have been available for any given school. The combination of client and Fardux location schools will hopefully provide a more flexible training offering.

This issue's newsletter has some interesting articles and some important technology announcements. We hope you enjoy the read and we welcome your questions and feedback.

**David Mason**  
Managing Director



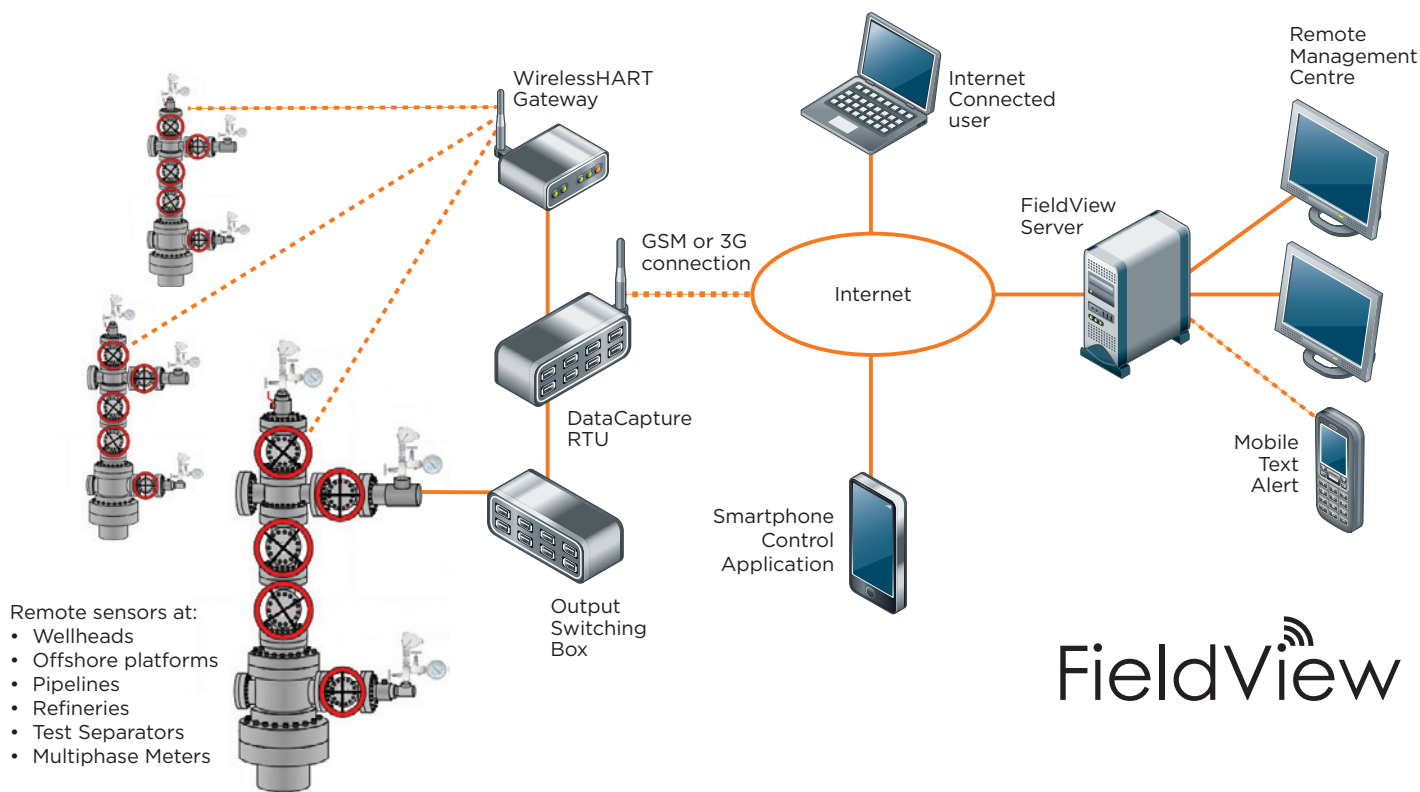
*Far left:*  
**Fardux's**  
**renown Data**  
**Acquisition**  
**hardware**

*Left:*  
**The**  
**complete**  
**Fardux**  
**IDEA Data**  
**Acquisition**  
**system**



# Production and Well Integrity Monitoring

As part of our new technology development, Fardux is pleased to be rolling out a completely new range of production monitoring and well integrity hardware and software.



## FieldView

The well location data acquisition is based around the **Fardux WirelessHART** Sensors and Gateway which, in turn, connects to the **Fardux DataCapture RTU** system.



**Fardux Wireless HART System**

The **Fardux DataCapture RTU** system reads the information from the **Fardux WirelessHART gateway** and stores it in its non-volatile memory ready to transmit to the **Fardux FieldView server** somewhere on the network. The FieldView system is capable of accepting data from hundreds of remote wells.

The **Fardux FieldView server** also contains alarm functionality similar to that in the IDEA Enterprise

system so that if a sensor goes out of limits a signal can be sent back to the relevant **Fardux DataCapture RTU** to output a signal to cause an action such as shutting in a well.

Because not all applications will require the output functionality the DataCapture system has been built in individual modules. Solar powered rechargeable or lead acid battery modules may also be employed.

← Continued from page 3

The image here shows the three modules used in the DataCapture system:

**DataCapture RTU:** (Real Time Unit)

MODBUS connection to Gateway,  
GSM/3G connection to Field View

**OSB:** (Output Switching Box)

Provides outputs for valve closures  
at surface and downhole

**PSU:** (Power Supply Module)

Provides 24V supply for system  
logic

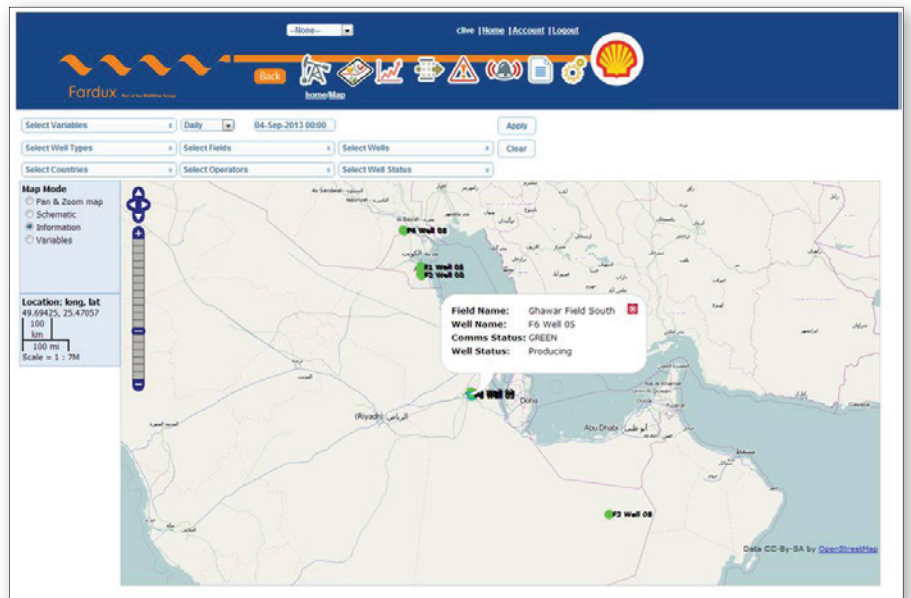


**Fardux DataCapture RTU , PSU and OSB**

In keeping with all Fardux software products, the FieldView application is extremely user friendly, intuitive and logical. Multiple filters, data views and reports all make field reporting and well integrity monitoring a straight forward process.

This product range is rolling out this quarter and will be show cased in Abu Dhabi at Adipeic in November 2013.

We are pleased to be offering some newer embedded technologies employing LINUX operating systems running on single board computer. Communication over GSM/ 3G is an interesting alternate to our more usual satellite transmissions comms and offers our clients the opportunity to transmit data from remote wells via the internet to centrally located servers at hugely reduced cost. Smart phone interface via a bespoke application enable production operators to log in and out of the system and even select well(s) to be remotely shut in given the required administrative permissions

A screenshot of the FieldView software interface showing a data table. The table has columns for various parameters and rows of data. The title of the table is 'Well Name: F6 Well OS'.

**FieldView: User-friendly, intuitive and logical**



## Wireless Data Acquisition

Fardux is recognised as the industry leader when it comes to Surface Data Acquisition systems. Moreover, as a company, we constantly strive to offer the best-in-class whilst continually developing our product portfolio. Our Fardux cabled system, coupled with our multi-platform software, is a robust and field-proven technology which has operated in some of the harshest environments over many years and remains the preferred choice.

We also recognised that some applications may require a wireless solution, although the jury is still out for many with regard to the total suitability for high accuracy and high reliability requirement environments.

For this reason we have been actively involved in the development of a compatible wireless system that is based on the standardised HART protocol in order to enhance data integrity and sustainability.

The HART Communication Protocol has served as the world's leading process communication technology for smart instruments since the late 80s. Over 75% of the smart devices installed globally are HART-enabled. Put simply, the Fardux battery-powered interface (FWI001) adds wireless capabilities to any HART instrument, or any instrument equipped with a 4 - 20 mA output.

## Fardux WirelessHART Interface FWI001

The **WirelessHART Interface FWI001** serves as an interface between HART devices and converts them to a WirelessHART device. It enables existing HART devices to communicate with each other, manages security and connectivity, and exports the wireless device data in a format that is compatible with both our existing IDEA Enterprise software package and our new DataCapture Logger (as described previously).

- Powering of one HART or one 4 - 20 mA device
- Alternative connection of up to four externally powered HART devices in multi-drop mode
- Burst mode and event notification for both itself and the connected devices
- Internal battery monitoring
- Remote mounting option from the transducer to ensure better wireless networking

Fardux's FWI001 **WirelessHART Interface FYI001** has been designed to act as an add-on interface for any HART or 4 - 20 mA device. It supports the following functions:

The battery has been specially selected to give long life when used in monitoring applications.



**Fardux WirelessHART Interface FYI001**  
connected (left) and stand-alone (right)



**Example of an existing HART-enabled differential cell converted to a WirelessHART device by the use of the Fardux WirelessHART Interface FYI001.**

## Fardux WirelessHART Gateway FGY001

The Fardux **WirelessHART Gateway FGY001** serves as a gateway device for WirelessHART networks. It enables WirelessHART devices to communicate with each other and manages security and connectivity while exporting the wireless device data in a format that is compatible with the Fardux IDEA Enterprise software package and new DataCapture RTU (as described previously).

The Fardux WirelessHART Gateway has the following features:

- Compliant with the WirelessHART specification
- Works with all WirelessHART adapters and devices (not tied to any single manufacturer)
- Ethernet and RS-485 interfaces with support of HART and MODBUS; network data easily integrated into existing system
- Web interface providing a clear presentation of network, measured values and diagnosis information
- Local or remote antenna options enabling easy adaptation to local installation conditions
- Acquisition of data from network devices and presentation to the connected system
- Web server supporting HART and MODBUS protocols for data transfer.

The gateway can either be mounted in the safe area with a remote certified antenna or in explosion hazardous area Zone 2. An integral or remote antenna can be mounted according to the needs of the application.



**Fardux WirelessHART Gateway FGY001**

## Fardux TimeBase

The Fardux TimeBase brings these devices together. The TimeBase is designed to supply a constant crystal controlled time reference for use with the IDEA software when a logger module is not present.

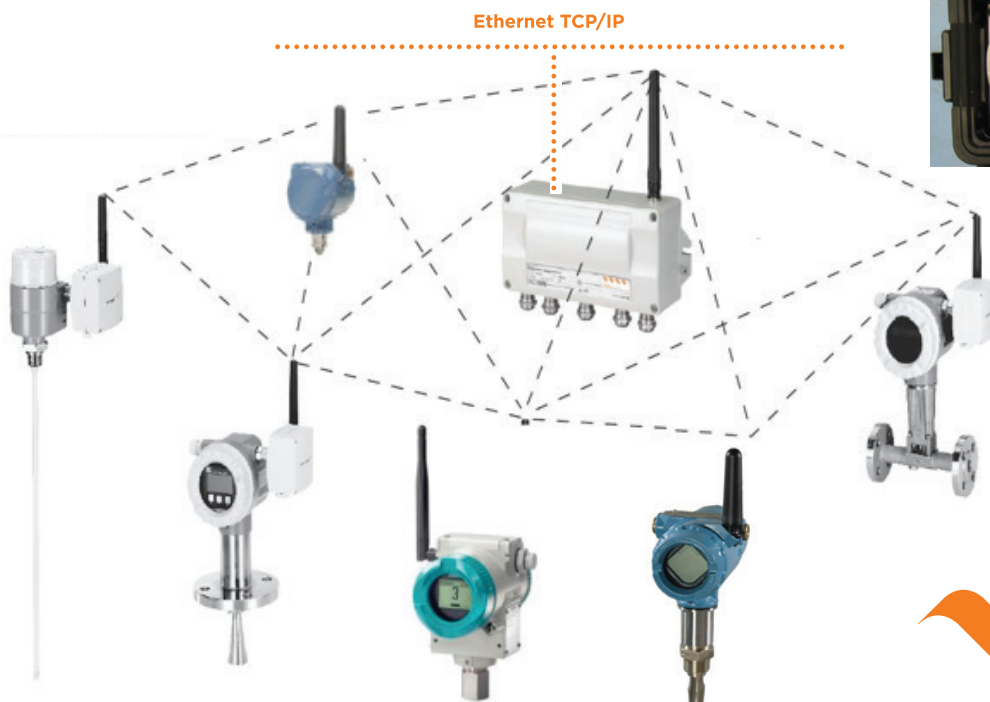
- When the IDEA software is started it automatically looks for the logger serial port to establish communications

- If the TimeBase is connected to the host PC then the software will identify it as a source of time and initialise communication
  - The TimeBase is mounted in its own robust case and supplied with a power lead and RS 232 cable.
- In the absence of a Fardux Logger, the TimeBase can be used to run the IDEA software and wireless system.



### Fardux WirelessHART TimeBase

The new Wireless Interface and Gateway add to Fardux's portfolio of solutions. Benefit from our experience and practical support at every stage of your project for the best of both worlds!





# New software release 4.3.0 for IDEA Enterprise and IDEA Lite

**Our latest software version is now available for download from our website at [www.fardux.co.uk](http://www.fardux.co.uk). Simply log in using you Daq Link details to access the download section.**

We have noticed that there are many new MODBUS devices being used on jobs recently such as coriolis meters, passive and active sonar gas metering as well as surface readout from downhole gauges. This has resulted in the need for extra MODBUS ports to be available on the IDEA Enterprise software.

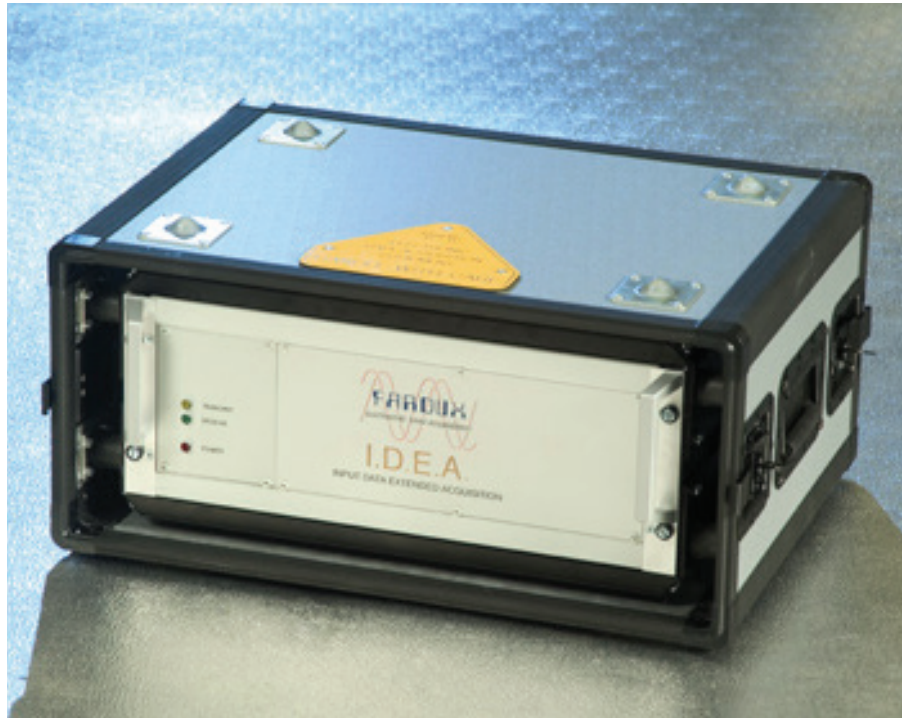
The number of MODBUS ports has been increased to four. These can be configured as RS232 or TCP/IP or a combination of both. There are still 50 variables that can be configured in total across these four ports.

Another request has been to send MODBUS data out from the software so that the software can be configured as a MODBUS slave. You can still use the MODBUS master option to receive data on one or more ports and configure other ports to be a slave. The MODBUS slave option allows 50 MODBUS registers to be configured by the user and all data in the database can be stored in these registers which includes MODBUS data being received by the master.

We have also made enhancements to the Wellsite Information Transfer Specification (WITS) data stream. At present any WITS data received by the software is entered into the database at the time it is received and this data is time-stamped by using the logger clock time. If this data is coming from downhole there may be a delay in the time the data was recorded and the time it is received by the software (usually referred to as 'lag time').

To allow for any lag time differences we have developed WITS real time functionality. Date and time sent in the WITS data stream is matched with existing database times so the WITS data is written into the database at the nearest time match. The WITS date and time must be a minimum of 60 seconds behind the logger clock as this allows for the times to exist in the database so the WITS data can be written to the correct time stamp.

As well as including WITS real time we have also included a Bulk Import option. This allows for data to be imported into the database from a file. The primary use



**IDEA Enterprise Data Logger**

of this function is to import data from memory gauges and it functions in the same way as the WITS real time option in that the dates and times from the gauges are read and matched to the nearest database records.

These new features can be purchased as options and added to the standard IDEA Enterprise software package by upgrading your dongle and the new features then become available. Remember software functionality is now delivered to HASP dongle users as an emailed feature.

This new enhancement allows you to configure your software to your exact requirements and at a lesser expense as you only "pay as you go" for the features you want.

Another change to the software is the removal of the configuration window for adding conditional schematics. Finally we have added new units for density and mass flow.

If you have any requests for additional features to be added to the software please send your suggestions and we will evaluate them for inclusion in future releases. A feature of our new web site to be rolled out early November will allow clients to make requests for new functionality via an online form.

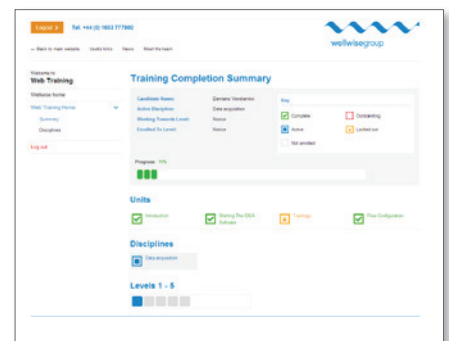
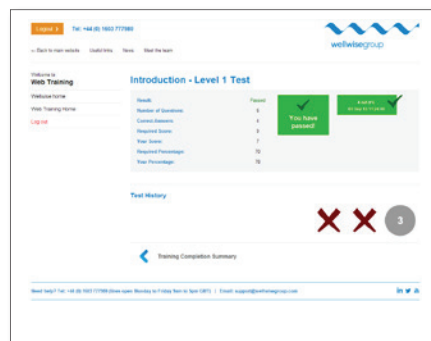
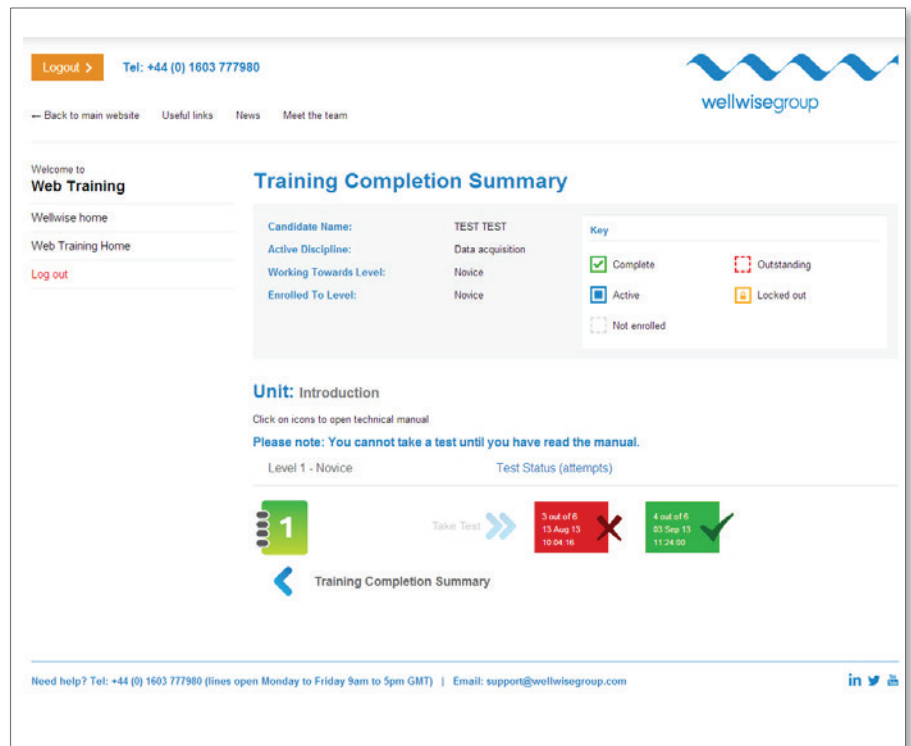
# Web Based Training

At the request of several of our clients, Fardux has created training manuals and course material for many of the disciplines in which we are active.

After the success of the Wellwise Group web-based Competency Scheme our web-based online training, has been developed in a similar manner. Course material is divided into several sections from trainee to supervisor levels and covers every aspect from basic information to theory and calculations. Delivery is in a series of individual downloadable sections that the candidate needs to pass before proceeding to the next section.

The Well Test courses are also available via traditional classroom lectures and will be supported by web delivery. All information and manuals are available via secure servers to eliminate the need to carry large and heavy documentation to and from locations.

The entire system is linked to the Wellwise Group's existing web-based competency system to ensure the technical level of all who undertake the training.



Left to right:  
 Muhammed,  
 Stephen,  
 Jawad,  
 Mehmood,  
 Ahmed, Yahja,  
 Abdulrazaq and  
 Hussein

Left to right:  
 Naveed,  
 Nabeel,  
 Muhammed,  
 Riaz, Syed,  
 Mohammed,  
 Bandar and  
 Sulaiman



# Data Acquisition Training

We recently completed two Basic Data Acquisition training schools for Expro in Saudi. Both groups were enthusiastic with a mixture of expertise amongst each group.

Following the successful completion of the Basic Training, several candidates are now keen to attend the Advanced DAS School which Fardux Middle East is hoping to conduct in the very near future. Moving forward, we intend to revitalise our scheduled training offerings at the same time as our new web site launch at the start of November 2013.



# People News

## NEW STARTS

### FARDUX UK

**Damiano Vendramini** joined us in February as Software Development Engineer. Damiano has a wealth of experience in IT and is looking forward to getting to work on our databases and producing exciting web site enhancements.



### FARDUX MIDDLE EAST

**Mohammed Mirajuddin** joined Fardux Middle East in late 2012 as a Service and Manufacturing Technician. He brings extensive technical experience to the company and has already undergone intensive training at our head office in the UK - and also witnessing a true British winter which should set him up nicely for the heat of the Middle East!



## TONY WOODWARD RETIRES

This year has seen the retirement of a much respected member of our team - Tony Woodward. Tony worked tirelessly for many years, largely in the background, on all Fardux hardware projects from the earliest days of the company. One of the first projects which Tony was involved in was the Fardux downhole memory gauge. We take this opportunity to recount the very first job that Tony worked on.

With a basic design specification in place Tony designed the PCB's while the rest of the team worked on software implementation and mechanical housing. After a long period of testing, the very first Fardux product made its debut on the 11th December 1990 at Carlos Petroleum's Humbly Grove A site by arrangement with a certain John Hewitt that some of you



**Tony Woodward circa. 1990**

may remember!

On marking Tony's retirement, managing director David Mason said: "Tony has been a very loyal and valued member of our team and we shall miss him. We all wish him a long and happy retirement."

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