



COMMS COURIER



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Welcome

Happy New Year from all at Fardux!

Quite a bit has been going on since our last issue CommsCourier, the pace of progress is unflinching and our technology treadmill keeps on turning !!!!

Its been a while since we have posted software on our web site and this is something that we have recently resurrected. To gain access to the secure section of our web site www.fardux.co.uk you will now need a User Name and Password. We have started to issue these passwords recently as part of our DAQLINK initiative which currently only allows software downloads to members, although will offer other download information going forward to include such things as Topical Technical Bulletins and Forms or Data Cast, MODBUS and ASCII jobs. **Continued...**

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We have already carried out a successful WallWatch trial and will be rolling this product out by the end of the first quarter 2009. Our Solar power generator system is now also completed and ready for roll out at the same time.

The 2009 Training schedule is already published on our web site and we have received strong interest for the first two courses in February and March.

January saw the release of Software version 3.0.5 with a host of new enhancements included. We look forward to receiving your comments on the software progress that has been made.

Enjoy the read..... and don't forget to sign up for Daqlink if you haven't already received your membership card.
fardux@wellwisegroup.com

Daqlink

Fardux have noticed recently that not all locations are using the latest version of the IDEA Software so to make this software more accessible Fardux have made some exciting changes.



We have now updated our website in order to allow authorized access to software downloads. To become an authorized user you can apply to Fardux for a username and password. These will be issued by Fardux and you will be sent a membership card to allow you to download the latest version of software and the associated release notes.

Further secure information will become available in the future and all of this will only be accessible if you are a member of the club.

Forgot your password? No problem you can request a password reminder from the website and we will send your password directly to your email address.

To become a member of the club please contact Fardux at fardux@wellwisegroup.com and put membership request in the subject box.

Mr. Jim's Poppy Appeal

For some years now Wellwise Group has supported the Royal Air Force Association Charity by allowing a small collection box for staff and visitors to donate the small coins they wish to relinquish.

This donation takes place about 2-3 times per annum with Wellwise Group making up the contribution to a round figure.

This year 2008/9 I became involved as Poppy Appeal Organiser for the Royal British Legion Charity, Beccles Branch. Never having done anything on this scale before I wondered how, and how much, I would be able to achieve. With the help of the R.B.L and 2 weeks vacation, I gathered my poppy stock and poppy helpers together and when finally October came, set about raising much needed funds for Service and Ex-Service personnel and their dependants. After 2 weeks

and meeting many great people, we sat down and counted the collection tins. To my amazement we had collected £17400.00 in just 2 weeks with a running total for the year of £18000.00. The final monies collected within the Beccles area is expected to be around £25-30K. Not only do I say "thank you" to all those who donated money and or their time to help raise these monies, but also thank you to The Wellwise Group for their much needed and continual support throughout the year.

As consultants working abroad within ex-patriot communities it is possible for you to assist the Royal British Legion during the Poppy Appeal by taking a few poppies and a collection box with you. This was done in a base in Kazakhstan raising £200.00. Well done that man!

If you would like to help this year or know more about the work of the Royal British Legion you can either contact me or go to the R.B.L. web site at www.britishlegion.org.uk

Author: Jim Ruff, Production Manager.



Digital Manuals Are Here

Beginning in August this year Fardux has been issuing training manuals in digital format as standard.

The manual comes on a memory stick that is encrypted and cannot be printed or copied. The new manuals have been very well received by the students attending our training courses. The main advantage of the digital manual is the physical size, a few grams compared to at least 1 kilo with the old paper version. Fardux are still offering paper manuals at an increased cost over the digital version, however Fardux will phase out paper manuals and from April 2009 all manuals issued will be in digital format. Fardux as a company strive to be as environmentally responsible as possible, ceasing to print manuals will offer enormous savings in paper, print cartridges and electricity. We hope you will all support our decision to phase out paper manuals. We would also like to remind existing manual holders that they can order a digital copy to replace their paper manuals, please contact Fardux for more information.

SunErgy Solar Power-Update

Our solar panel system SunErgy is now fully completed, tested and ready for commercial rollout. The system is, in line with our other products, robustly constructed and engineered and offers a power solution for rig-less data acquisition jobs. The SunErgy system is designed to power Transducers, Logger and Computer from a single solar panel.



**Left: assembled solar panel
Below: carry case**



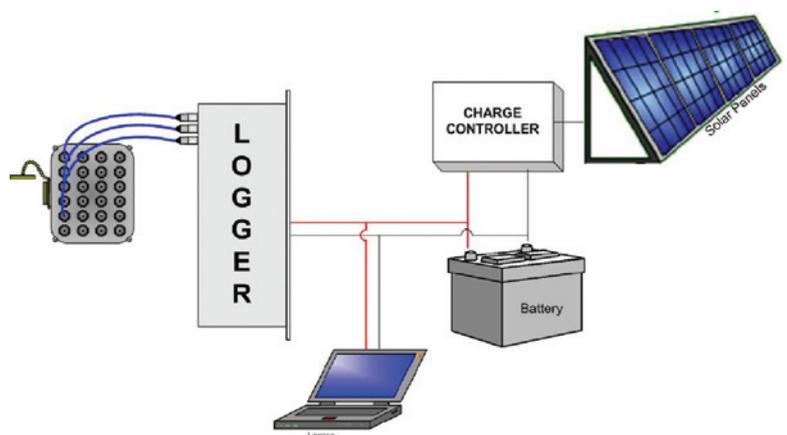
The case contains all the constituent parts to assemble and run the solar panel assembly. The construction of the solar panel is modular and is facilitated with the minimum of tools and completed in a few minutes. Because batteries are heavy and therefore expensive to ship, clients will be able to purchase the non propriety batteries locally on the strength of information supplied by Fardux to support this process.

It is also necessary to have a specific power converter to allow connection and charging of computers/laptops which again we will be pleased to help you with.

The shipping case is our usual substantially built unit which should withstand the test of time, even in the most challenging circumstances. The support frame is made from aluminum to minimize weight and avoid corrosion. The unit can be fully assembled and charging inside the space of 10 minutes- straight out of the box.

This technology should prove useful for all clients carrying out inline desert or remote land location jobs where there simply is no mains power or even a dedicated truck/vehicle for much of the time, from which to obtain a power source.

Please contact fardux@wellwisegroup.com for a quote or more detailed information.





Fardux have just completed the last training school of 2008. The students all enjoyed the training and for some it was their first visit to the United Kingdom.

The training dates for 2009 have now been released and are available from the Web site http://www.fardux.co.uk/train_schedule.pdf. Please book early to avoid disappointment as places are strictly limited.

We have had some students arriving into London Heathrow airport which is 120miles from our Norwich office. It is not always easy to find your way from Heathrow to the tube station then onto the mainline trains to reach Norwich especially with baggage. It is much easier if students fly into Norwich airport via Amsterdam it is only a 30 minute flight and then a short taxi ride to the local Hotels.



Jim Ruff (Production Manager) centre stage



Left to right *** , ***** , Clive Curtis (Training Instructor), ***** and *******

IDEA Basic Training School

For our published schedule schools we send out , six week in advance, notification of the next school to take place. It is very common now for anything between one and three students from a number of locations/ companies to be enrolled. Each company or location may then be asked to raises a purchase order and we acknowledge this order with the following:

- Training scheme agreement
- Sales Order Acknowledgement
- Hotel and Travel information (Places to stay, Taxis's and Trains)
- Letter of Invitation for entry visa to UK

Before we ask clients to confirm by way of their purchase order we generally have to wait to see what the recorded interest is for a particular school so that we know that we are going to achieve sufficient numbers to warrant the school taking place. Very often this goes all the way to the wire, although we do try and make a confirmation cut off date no less than two weeks before the course start date . If interest and response to our mail shots is brisk we can sometimes confirm courses straight away.

Its very often difficult for clients to know what their likely work load/ crew requirement are and its difficult for Fardux in that we don't like to hold schools with less than five students and until such time as we have sufficient expressed interest we don't like to go to the next level and request people purchase orders.

The good news is that we only cancelled one class in 2008 and we hope not to cancel any in 2009. We appreciate that there is additional comfort for clients if they know that our schedule is firm and courses are definitely going to go ahead. The reverse side of this coin is that we do need your continued and early support in order to make our training Schools viable.



Software Version 3.0.5 update

Fardux are now working on the next release of the IDEA software code.

There are some exciting new enhancements included in this release, including a wizard to make transducer calibrations easier to perform and report. There will also be the availability to save multi plot templates so they can be easily accessed for future use. Also included will be some changes made to the way cumulative values are handled, the operator will now be able to add an offset value to gas oil and water cumulative values. This enhancement has been requested from several clients.

There will also be the usual modifications to fix any bugs that have been reported during the past year.

As usual full details of all changes will be included in our release notes.

Remember if you have any suggestions on how we can improve the software then e-mail us your ideas and they will be recorded in our database for bi annual review and if they add sufficient value to the existing product they may be included in future releases. We cannot guarantee inclusion but your ideas are always welcome and if we cannot incorporate the whole request we may be able to include some of it.



Also remember you can now download the latest released version of software from our website.

IDEA Logger Inputs & Outputs

| Equipment | Connection | Description | Protocol | RX and TX |
|------------------------------------------------------|------------------|---------------------------|----------------------|------------|
| Fardux Data Loggers | RS232 | Bespoke Data Stream | Fardux | IN |
| Inter Company Data Transfers | RS232 | Industry Standard | WITS | IN and OUT |
| SandSnoop Sea Link Slickline Measurement Systems CSV | RS232 | Non Standard/Configurable | ASCII | IN and OUT |
| Down Hole Gauges | RS232 and TCP/IP | Industry Standard | MODBUS MASTER | IN |

Within the IDEA enterprise software there are features that will permit the import and export of data from sources other than the IDEA logger.

The primary source of data transfer is from the **Fardux Data Logger** itself, this is a compressed binary format that contains the time and date plus the raw readings of all the sensors.

The current primary source of data input and output uses the **WITS** protocol. This is a long established protocol that allows computers to communicate without compromising security. This is available only as RS232.

The system will also support **Modbus** RTU in both RS232 and TCP/IP. This is only an import and currently is used mainly for the interrogation of downhole gauges.

The other type of input currently supported is **ASCII**, again via the RS232 ports. This type of input is non standard and as such we have written the software to be configurable to match the non standard type of ASCII data stream. This type of input can be used with Sea Link, Wireline Measurement systems and the Fardux SandSnoop sand detectors.

Another type of ASCII output is the CSV file, where CSV stands for Comma Separated Variables, that is generated from the IDEA reporting system. The use of the CSV format allows the user to import the data straight into Excel, Access and many more database programs.

Well Testing PLC



In line with our range of data acquisition equipment Fardux also manufacture an E.S.D. PLC specifically aimed at well testing operations.

The PLC has been specifically designed to function in parallel with the Fardux IDEA Enterprise data acquisition systems.

In order to minimise the amount of transducers required the PLC and IDEA physically share sensors as shown below.

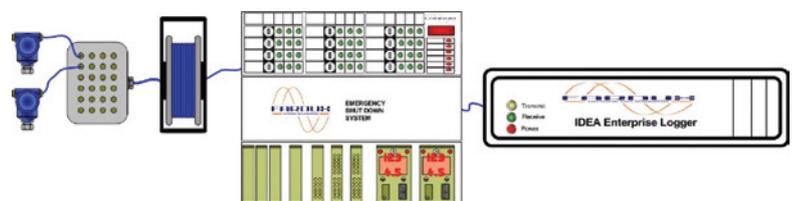
To comply with safety regulations the PLC uses two sensors per monitored point. This becomes a simple voting system where the first transducer to register a safety fault will trigger the PLC to perform its designated action.

The designated action for the PLC depends upon the programming, this can be from shutting or opening a valve to sounding an alarm depending upon the actions required.

The PLC can integrate with the IDEA Enterprise software where the IDEA software can re-set specific non critical alarms to suit the application as the job progresses.

The IDEA Enterprise software can also be used to record all the data from the PLC for inclusion in the final reports or for diagnostics after the job has finished.

The PLC can interface with the OLSB and can utilise all the alarm skirts and external switching devices.



Travelling to Fardux

Over recent training courses there has been some confusion regarding the best method of getting to the Fardux premises.

The best way is to travel to Amsterdam and then get a short flight across to Norwich.

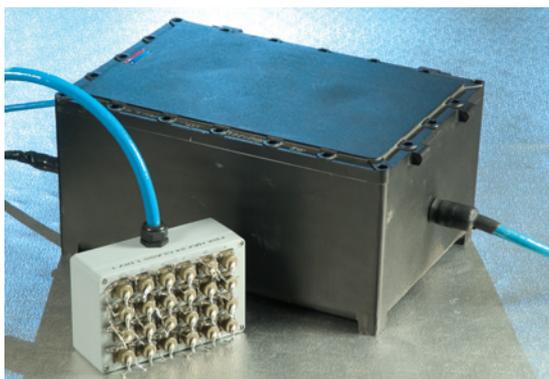
From Norwich Airport the Fardux premises is less than 10 miles by road.

By comparison the distances by road from London and Aberdeen are:

- **London to Norwich – 120 miles**
- **Aberdeen – Norwich 480 miles**

There is no direct flight between London and Norwich so the only ways of getting to Norwich is either a taxi or by train.

We have heard several times that a separate visa is required to come through Amsterdam, this is not true. You need a separate visa if you enter Amsterdam itself but if you stay in the "in transit" part of the airport itself, which all the flights to the UK depart from, there is no problem.



Hazardous Area Boxes

Within the data acquisition world there consists of two different types of explosion protection that we encounter on a regular basis.

ATEX is the European Union's harmonisation of the explosion standards from its member countries although this standard has been applied by most countries throughout the world. ATEX stands for **AT**mospheric **EX**plosive.

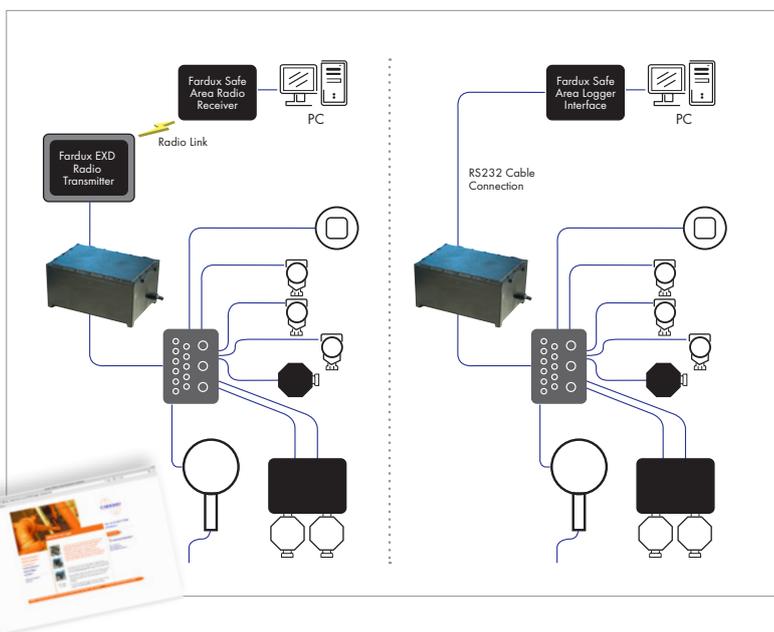
Flameproof uses the method where the equipment is contained within an enclosure which will withstand an internal explosion of a flammable gas or vapour that may enter it, without suffering damage and without communicating the internal explosion to the external explosive atmosphere, through any joints or structural openings in the enclosure.

These boxes are often large and very heavy due to the nature of the protection system. These boxes will carry a certification plate with a **EEx d, Ex d or AEx d** number and type stamped on it.

The other type of protection, the method used by the IDEA logging packages is Intrinsic Safety.

Additional measures are applied to an electrical apparatus to give increased security against the possibility of excessive temperatures and of the occurrence of arcs and sparks during the life of the apparatus., these are the safety barriers contained within the logger itself.

It applies only to an electrical apparatus, no parts of which produce sparks, arcs, or exceeds the limiting temperature of the materials, upon which safety depends, that are used in its construction. This means



that it differs from the flameproof certification in being a system certification where all component parts must conform to the intrinsically safe rules.

The certification should match the location the equipment is placed in therefore the hazardous area or zone must be known. The list below defines the three major zones that the oilfield encounters.

- **Zone 0** - a place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is present continuously or for long periods or frequently;
- **Zone 1** - a place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is likely to occur in normal operation occasionally;
- **Zone 2** - a place in which an explosive atmosphere consisting of a mixture with air of dangerous substances in the form of gas, vapour or mist is not likely to occur in normal operation but, if it does occur, will persist for a short period only;



What is your current location and position?

My current location is the Expro Group Broussard, Louisiana North yard.

My current position is Technical Professional.

What are your main job functions?

Data acquisition, well test supervisor, and shop supervisor when needed.

What is your background (job history)?

Well testing for the last 10 years beginning with Halliburton, then Power Well Testing, and now Expro Group Well Testing. Prior to that, I worked for the State of Louisiana in the Office of Family Services and the U.S. Postal Service.

What aspects of your job do you find challenging?

No two jobs are the same. Ever job presents new challenges and/or problems and it's my nature to look at a problem not as a problem but as a challenge. That challenge is the basis for broadening my experience level and hopefully passing on that knowledge to others in order to save them time and our company money and passing these savings on to the customer ultimately in order to get their repeat business on other future projects.

How are the Fardux data acquisition products used in your area?

Almost ever deep water well test I've been on in the last 2 years has utilized Fardux Data Acquisition along with the real time web site. Our customers are absolutely amazed and satisfied with the real time data and the features (graphs, reports, etc.) on the web site. We've also used Fardux data acquisition when testing various pieces of our well test equipment such as charting our 24 hour coflexip hose tests for example.

What locations have you visited recently?

Malabo, Equatorial Guinea, Malongo, Angola, Gulf of Mexico, Rock Springs, Wyoming, and Williston, North Dakota.

A Day in the life of a Data Acquisition Hand KENT BORDELON



Was there a highlight or lowlight?

Experiencing new cultures and working with people from different counties is always a highlight, but the lack of adequate medical facilities (E.G.) is in my opinion a safety issue which cannot be easily addressed by our company. Unfortunately it is an issue that the government itself has to address.

What location would you like to travel/work in?

Brazil. I haven't been there yet.

How does your family life cope with you being away?

I don't have any children, but my wife doesn't mind as long as I don't stay away more than 2-3 weeks at a time on a continuous basis. She keeps things together long enough for me to make it back and get things back in order.

What are your Hobbies?

I absolutely love to play 9-ball or 8-ball. Also enjoy fishing, hunting, riding quads, and working with wood.



With the finalizing of the WallWatch hardware/software development and bench testing behind us, in early December 2008 we took the package to the field for trials on a live flowing well with the intention of verifying the assembly and the function of the sensor array mats under "live" conditions.

Up until this point in time, the sensor array mats had only been tested in a static environment, we needed to see the response under flowing conditions.

The WallWatch sensor was positioned downstream of a bend that had a SandSnoop Monitor installed.

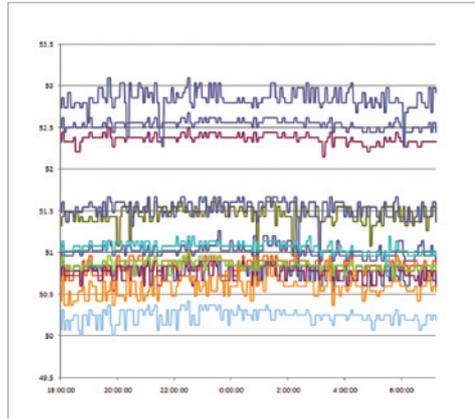


Sensor Mat mechanical protection is normally held together with industrial strength clips. On this occasion the pipework O.D. was incorrectly specified leaving us with no other short term choice but to make use of good old bandit. Its all about the contact of the Sensor Mat and the face of the pipe..... Fortunately we had some good luck with the surface of the pipe and the show went on producing some excellent results and consistent contact between mat and pipework.

With the well flowing the flowrate, sand production and erosion rates were monitored and plotted.

The graph above shows the output from the WallWatch mat over a period of 12 hours. Although the graph

WallWatch Field Trial



looks to be unstable on clearer inspection it can be seen that the instability of reading is no more than approximately 0.5 mm.

The ultrasonic readings from the WallWatch sensor mat tie in with the readings from the ultrasonic thickness inspection carried out prior to the frac that had taken place.

The conclusions that can be reached are that the sensors are not susceptible to flow noise nor interference from the sand detectors and offer a good comparison compared to a manually gathered hand held readings.

Our forward plan is to develop a mathematical model that will become increasingly more accurate with increased data entry concerning upstream and downstream realtime wall thickness's as well as ultrasonic hand held measurements for the point of direction change (flow elbow) based on Chen, McLaury and Shirazi white paper March 2006.

We are not pretending that there will ever be a finite measurement application to prevent all uncontrolled emissions although we do believe that we are well on the road to a solution that will offer considerable safety advantages and reduced down time over where the sand / frac sand flow back oilfield world is at this time.

The system multiplexer is capable of interfacing with up to 10 sensor array mats placed at strategic points on the flow back pipework/ manifolding. Each sensor array measures wall thickness at 14 fixed points around the circumference of a pipe .

If you would like further information or a quote on our WallWatch product , please email fardux@wellwisegroup.com