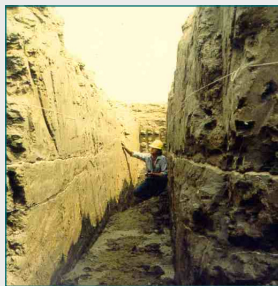




APPLICATION FOCUS

► Fracing with Precision

Fracing, a short term for Hydraulic Fracturing, is a process that helps connect smaller fractures, or channels, in oil and gas wells by creating strategic larger fractures that can unite the release of oil and gas to the surface. The objective is additional yield. A highly viscous liquid is injected under pressure to accomplish the fractures, then retrieved from within the rock. A propping agent (graphite, sand, plastic) keeps the fractures open for resulting extraction.



As with all extraction processes, efficiency determines whether the process is profitable, in terms of economics and yield. Also, there are risk factors of pollution and disturbance of adjacent water aquifers or underground water channels.

Highly accurate geophysical surveys are needed to ensure success in fracing. Microseismic monitoring of hydraulic fractures can provide extensive diagnostic information on fracture development and geometry.

Critical elements of a monitoring system include three-component receivers and a telemetry system, and accuracy of the velocity model used to process acquired data. With improved data acquisition and communication facilities, it is becoming routine to capture and transmit data from the wellsite to the office, allowing jobs to be monitored or redesigned in real-time, as required.

Fracing trucks are employed in some of the harshest environments in the world and are subject to extreme shock and vibration. ProPanel® models MP2030 and MP2500 are field-proven, rugged, offroad-transportable computers that are highly resistant to EMI/RFI, shock and vibration. Results from direct installation on fracing trucks and continuous outdoor duty in some of the world's most rugged environments have proven that ProPanels are ideal CPUs for the complex monitoring and control of the fracing process.



Benefits:

- **Reliability** - ProPanel has the lowest MTBR of any ruggedized computer used in outdoor truckmount applications
- **Features** - Flexible architecture accommodates your proprietary firmware & I/O
- **Low cost** - Enhanced functionality and return and long service life result in lowest cost of ownership and highest ROI

ProPanel architecture accommodates OEM firmware. I/O is configurable, providing the advantages of a customizable solution without custom engineering expense.

Call today (800.950.2382) to speak directly with our applications engineering staff to find out more about how ProPanel can help optimize your fracing services.

Product Expo • • • • •

ES1000: Create Intrinsically Safe Ethernet

The **ES1000 Hazardous Area Ethernet Switch** enables installers to route cabling and create networks more easily in hazardous environments. Its low-power, rugged design and versatile mounting options make it ideal for any industrial application in safe areas, Zone 1, or wherever a rugged Ethernet switch can enhance connectivity. The unit is compact and has an integral heat sink for cool operation.



- stand-alone intrinsically safe (IS) switch
- 5-port (4 IS ports and 1 safe area port)
- 10/100 mbps using CAT5E/CAT6 cables
- din rail-mount, wall mount, desk mount
- speed & activity indicators for each port
- standard cables & connectors save cost
- rugged, low-power, low-heat design

The IS Switch incorporates internal barriers and isolated circuitry to guarantee safety and high-integrity signals with resistance to ambient EMI/RFI radiation. The new, patented ES1000 enables easier placement and networking of control and interface equipment at point-of-attack and multiple access points in Zone 1 environments.

Systems can be linked to each other to create shared data acquisition or monitoring and control between computers or other devices capable of communicating over a standard Ethernet network.

PATENT PENDING

Celebration • • • • •

25TH YEAR ANNIVERSARY FOR AZONIX!

Azonix Corporation was founded in 1981 as a design and manufacturing firm specializing in rugged, high-precision measurement and control products that delivered performance and reliability of laboratory quality instrumentation while operating within harsh environments.

In 1991 Azonix introduced the ProPanel® HMI product line that since shaped Azonix as the leading HMI solution provider in the O&G exploration market. In 1994 we became a division of Crane Co., a member of the Controls Group. Since 2004, a new management team lead by Greg Baletsa has taken Azonix Corporation to new levels, driving operation excellence based on lean enterprise with leading-edge technology and service.

CRANE

azonix

AZONIX NEWS & EVENTS

Partner Section Added to Website

▶ Azonix has added a new Partner Section to the corporate website, featuring secure login, Technical Help Request, FAQ Section, Certification Lookup, RMA Request Form, Sales Request Form and more.

To receive a Partner Login username and password, contact your Global Account Manager (J. D. Castle - jcastle@azonix.com, or Taylor Browne - tbrowne@azonix.com).



Many of our product user manuals and data sheets are also available on the site in PDF form for quick reference and download, in the public section of the website. Watch for additional service and support features as we continue to enhance the site.

www.azonix.com

▶ Meet Chris Hartfield, Azonix' New Inside Sales Specialist



The addition of Chris Hartfield to our inside sales team enables Azonix to achieve a new level of customer service. With 18 years of experience in the oil & gas industry, and a background in manufacturing operations and process excellence, Chris works to “see that all our customers’ needs are being addressed, and provide an inside access point to internal resources that can expedite development, production, and fulfillment”.

Chris is a Six Sigma Green Belt and a LEAN Champion, enhancing CRANE Operational Excellence in our customer service department. Contact Chris for pricing information, to place orders or inquire on order status, obtain spares or repairs, for product application information, problem resolution, adaptive engineering and more. Chris will help you keep continuity in your continuing relationship with Azonix by handling issues within his scope and coordinating with our internal resources for other needs. He may be reached at the Azonix Business Center in Houston, 832-251-8800 x221.

Amazing Facts

- Pompeii Worms survive more heat than any other animal, thriving in environments with temperatures up to 176°F.
- In Florida, if you park your elephant in a metered parking spot, you must pay the meter.
- Only humans and cats have an allergic reaction to poison ivy.
- In Ohio, it is illegal to get a fish drunk.
- The ProPanel TC2500 wireless thin client has a high-speed data transmission range of up to a half a mile.

one fact is false! find out which one is wrong at www.azonix.com/facts

Comment



Introduction to Thin Client

Parag Shah, VP of Technology

Thin Clients are network computers that rely on servers for applications and processing power.

They don't require as much horse power as PCs, or large memory storage such as disk drives, and are simpler to administer & maintain. One of the biggest advantages of using thin clients in Oil & Gas exploration applications is improved reliability, since the device has fewer parts and requires less power than a PC.

Networking - Connecting the Thin Client

In the last few years Ethernet has been industrialized by companies developing ruggedized devices such as switches, cabling, radios, PLC interface and computers. The ample Ethernet bandwidth and multiple media options such as fiber, copper & wireless make this networking architecture a solid choice for O&G applications.

Utilization of Thin Client in Oil and Gas Applications

Several solutions ranging from high-end computers to remote terminals have been utilized in O&G exploration applications. In some application areas thin clients have worked very well, such as directional drilling, LWD/MWD & mud logging applications. Typically sensor wires are routed to the safe area where the DAQ and the high-end computer reside. To display information on the rig-floor effectively, a thin client fits nicely, as it does not require the hardware, operating system and application software support of a PC, and doesn't create a security risk as with a remote terminal.

Future expandability

Flexible architecture allows use in typical server-browser mode, as an embedded controller running an application in remote terminal mode, and offers future expansion into areas such as Voice Over IP & Video Over IP, which can replace the old walkie-talkie and communication devices and assist in remote monitoring, live visual updates from rigs, experts helping from centralized control rooms, etc.

The applications addressed above are exciting for the engineering and marketing folks. But the Operational Group appreciates the easy product-life-cycle support. Unlike PCs, thin clients don't require frequent updates, and have fewer parts. Initial costs are low and maintenance is less expensive. The same unit can be used in various applications, so the operations group doesn't have to manage multiple SKUs.

Parag Shah, VP of Technology



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