



Latest and greatest WiFi technologies Customized For the O&G sector



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Introduction

Do you have Wi-Fi here? What's the password? Sitting in a Starbucks or any other café, this is probably the most common question you will hear. We are getting used to having instant high-speed access to the Internet wherever we are. The reasons are plentiful, we like to communicate, share and retrieve information faster and more often than before. Increasingly our devices are becoming more and more connected. Your TV, radio, cellphone and even toaster have Wi-Fi. Wireless technology opens up for new usage scenarios for Internet enabled devices. Wireless networks simplifies access to the Internet, it is reliable, high-speed and secure. This development started in the consumer space, and we now see the same development in the office and in industrial applications, such as oil and gas installations.

“By installing wireless networks, organizations can immediately start taking advantage of these new technologies”

As remote- and integrated operations are becoming more widespread, an ever-increasing amount of information is being exchanged from offshore to onshore facilities. A growing number of EX PC terminals, EX PDAs, EX video terminals, control and monitoring systems are offered with integrated wireless networking. As the number of sensors installed at remote locations increases, there is a high cost of connecting these to the network and the onshore operations center. Having wireless infrastructure available decreases the cost of this deployment of these devices. By installing wireless networks, organizations can immediately start taking advantage of these new technologies.

The information flow is often critical and therefore needs to be reliable, available and high speed. To date, the information has been sent using wired networks. Laying cables to each device is both costly and unnecessary. For hazardous environments, Wi-Fi offers many benefits. Wi-Fi is more cost efficient than laying expensive intrinsically safe cables to the

places where connectivity is needed. Wi-Fi is more flexible since one access point can serve many different clients and processes at once. Also having Wi-Fi coverage opens up for the use of new technologies such as wireless video collaboration systems for remote problem solving and monitoring and Wi-Fi tagging.

Pixavi started developing EX-certified wireless infrastructure as far back as in 2002. This gives Pixavi a decade of experience with wireless networking in hazardous environments. The primary reason for the development of these products was to support the use of mobile wireless video conferencing units, also developed by Pixavi. The problem was that there was no EX certified wireless access point available. The idea was that the access point could easily be retrofitted to existing installations, directly to in the EX zone. This will decrease installation costs for both retrofitting and new builds. The access points also needed to be customizable and support the latest communication standards. The EX Zone 1 certification is key for most installations offshore. Increased focus on HSE, ease of installation, and the need to use the access point during an emergency makes this an absolute requirement for most usage scenarios offshore.

Pixavi has been, and will be, a pioneer within wireless infrastructure for hazardous environments. Pixavi was first to introduce dual band access points. Wireless networking infrastructure installations should be ready for tomorrow's devices. The bandwidth and capability of today's technology is growing rapidly. Since Pixavi is leading the development for Wireless infrastructure in hazardous environments our customers are always one step ahead of the development. We guarantee that we will keep up, and even push forward the development, making sure our customers have the most recent technology. With Pixavi solutions you are one step ahead of the game.

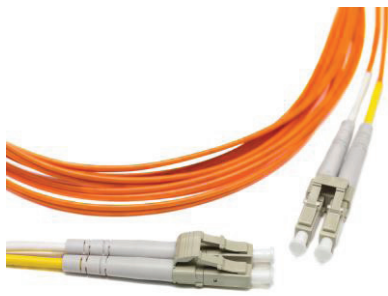
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Benefits from having wireless infrastructure

As described briefly in the introduction, wireless networking opens up possibilities and reduces costs. Wi-Fi is the best way of providing connectivity to the growing number of connected devices. For industrial and hazardous environments, the benefits are even more obvious. These environments are more demanding, meaning that a proven solution that is customized to the application is needed. There are several reasons for choosing wireless infrastructure from Pixavi:

- Redundancy
- Ease of installation
- Reduced installation costs
- Bringing the problem to the expert, not the other way around
- Reduce the need for personnel offshore
- Increase the HSE
- Support multiple locations, operations and processes at once
- Transportation costs
- Accelerate decision making

Characteristics of a smart wireless network infrastructure

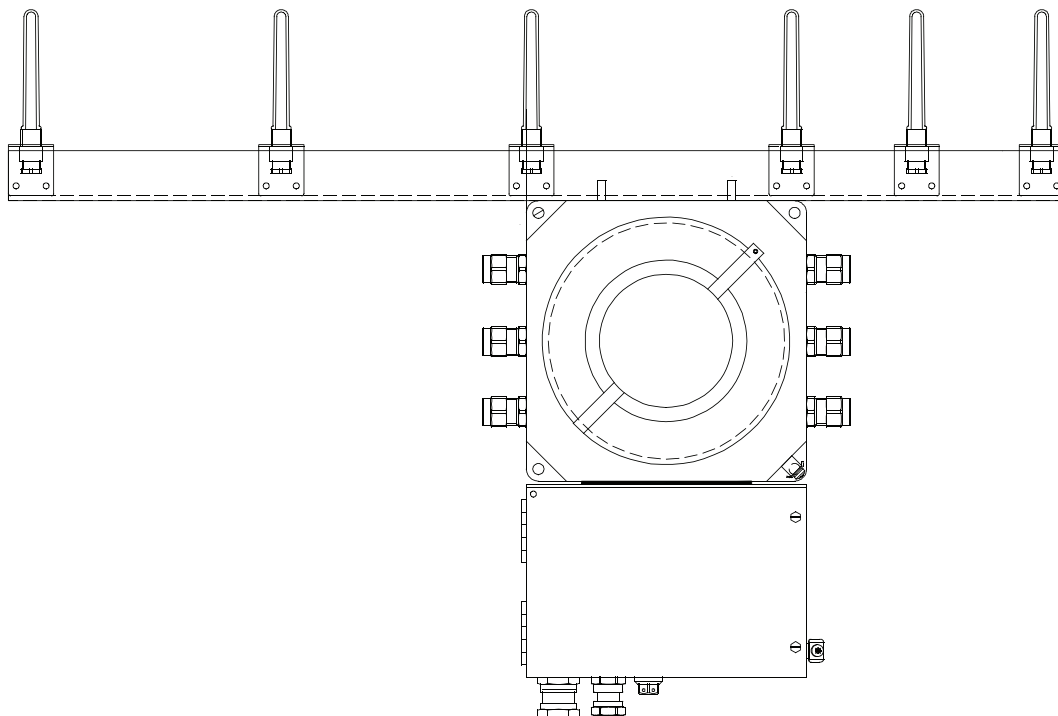


A smart wireless network is reliable, secure and easy to deploy. A smart wireless infrastructure allows the user to remotely manage and configure usage and settings. You also want to ensure that the infrastructure supports all communications standards and enable a wide range of devices to be connected simultaneously and seamlessly. You also want the network to be ready for the future, meaning that you want the newest and most up to date technology available. Also, the network should be self-healing and self-optimizing.

How to implement a Wi-Fi solution in your organization

The most versatile product for EX and ATEX Zone1 applications is the Pixavi EX-AP-A. The EX-AP-A is highly customizable and can be delivered with everything from 1 up to 6 antennas (2,4 GHz and 5 GHz). We can also deliver with fiber or Ethernet cable interface.

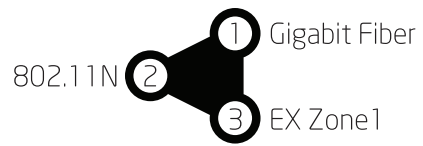
Here is an illustration of the EX-AP-A with antennas and brackets, ready for deployment.



The access point comes with several antennas for optimal coverage. Pixavi has experience in getting coverage in the most places. Using a combination of experience and the newest technology available we advice our customers on the best solutions.

Pixavi's key competitive advantages

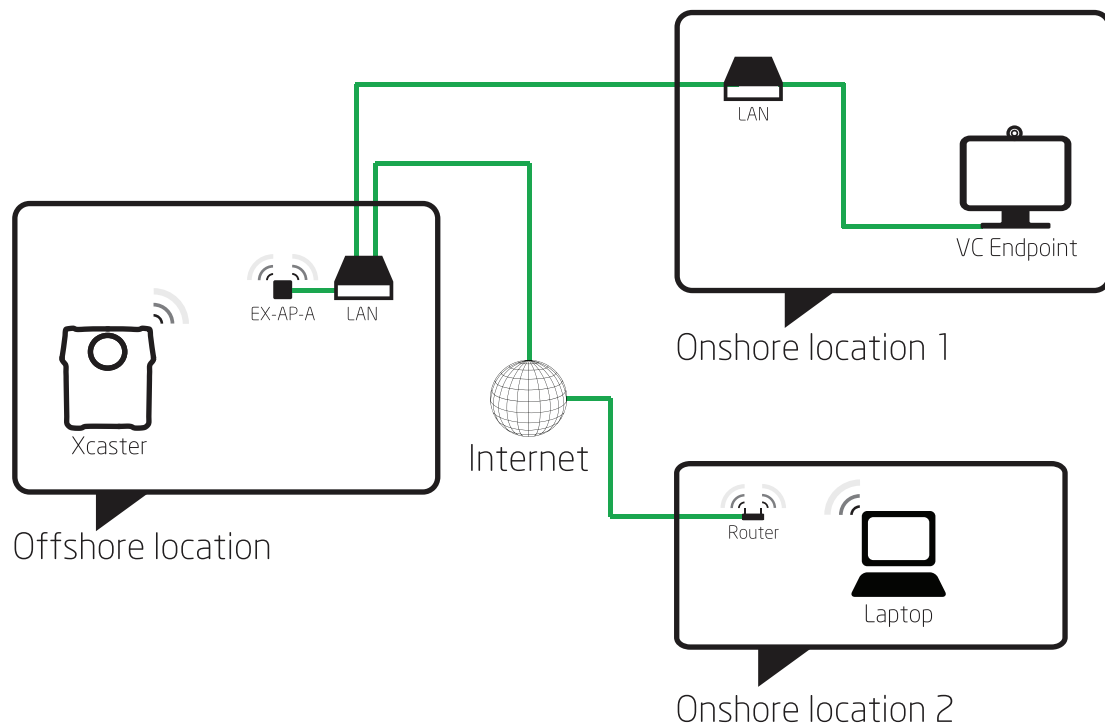
Pixavi were first to introduce dual-band 802.11a/b/g/n access points for hazardous area. The EX-AP-A also supports both multimode and single mode fiber in addition to POE. The access point allows for a multitude of cable types and antenna configurations enabling wide range of applications. Pixavi have a wide range of EX certified antennas, both omnidirectional and directional, and from 30 meters up to several kilometers coverage. The included Xbeam A antennas can connect with up to 30 meters of antenna cable without significant loss of signal. The antennas have a wide-angle beam, providing better coverage in multi path environments (metal walls etc.) that involves signal reflections rather than line of sight transmission. The EX-AP-A Access Point can be configured as both a mesh endpoint and a standalone access point. Another benefit is that only one cable is needed to connect the access point to the network containing both power lines and Ethernet (POE).



“ The cost/ benefit of introducing wireless networks is even greater in hazardous and offshore environments”

Installing wireless networks instead of cabled networks cuts cabling cost and enables temporary network connections while maintaining communication speed and security. The cost/benefit of introducing wireless networks is even greater in hazardous and offshore environments, where cables, throughputs, glands and manpower are very expensive. An increasing number of EX PC

terminals, EX PDAs, EX video terminals, control and monitoring systems are offered with integrated wireless networking. By installing wireless local networks, organizations can immediately start taking advantage of these new technologies.



The advantage of the EX-AP-A is that the entire solution is EX certified, meaning it can be installed directly in the EX Zone. This feature makes planning and installation easier and therefore cheaper. The dual band 2.4 ghz and 5 ghz Ex d /EEx de access point has been custom designed to accommodate a wide range of configurations and features like an EX-e junction box, Gigabit fiber support, PoE/cat5, lightning protection, amplification and several antenna connections and configurations.

With the EX-AP-A you can create a state of the art wireless infrastructure directly in hazardous area with minimal efforts. The EX-AP-A has a dual radio design that enables coexistence of 802.11n, 802.11g and 802.11a networks. Wireless networks help organizations cut cabling cost and increase connectivity within their own facilities to start utilizing a wide range of wireless applications.

Pixavi has a frame agreement with Statoil for Wireless infrastructure. This means that Pixavi is the preferred supplier of wireless network hardware coverage to Statoil.

Pixavi typically work closely with the customer to find the best solutions. Pixavi can also mount free issue equipment inside the enclosure, to provide EX-certification to a wide range of products. Examples of equipment found inside Pixavi EX enclosures are: repeaters, gateways, servers, computers and other types communications hardware.



Summary

The ever-increasing need for connectivity between all devices means that wireless networking technology is here to stay. The need for connectivity is even greater in hazardous environments where control over people, processes and equipment is absolutely crucial. Creating coverage in a hazardous environment should be as easy as in your home. This whitepaper have revealed that a wireless network can reduce deployment costs, increase safety, and enable an organization to achieve better integrated operations

To learn get information about wireless networking in hazardous area, go to the Pixavi webpage: www.pixavi.com or contact sales directly at: sales@pixavi.com, / +47 90943156