

Case Study

SAMREF Refinery Embraces Wireless Applications, Sets Foundation for Site-wide OneWireless Network Infrastructure



"Wireless seemed like the natural answer to our immediate need for mobile video monitoring and Honeywell was the right partner because of its broad range of products and solutions and its field-proven track record in the areas of security, reliability and professional support."

Mr. Azam L. Al-Hakeem, Information Technology Superintendent, SAMREF

Background

SAMREF is a joint venture between Saudi Arabian Oil Company (Saudi Aramco) and Mobil Yanbu Refining Company Inc., a wholly owned subsidiary of Exxon Mobil Corporation. Saudi Aramco is the world's largest oil producing and exporting company with a history dating back more than 80 years. Exxon Mobil Corporation is a global energy company which conducts business in 140 countries on every continent throughout the world. The SAMREF refinery complex in Yanbu, Saudi Arabia produces approximately 400,000 barrels of product daily including gasoline, heating oil, LPG, jet fuel and other energy products. The Yanbu operation is said to be the most sophisticated grassroots refinery ever built.



The Honeywell Wireless solution allows SAMREF to enhance their incident management procedures and rescue operations.

Benefits

The Wireless solution allows SAMREF to enhance their incident management procedures and rescue operations resulting in improved employee safety. Deployment of industrial video cameras over the wireless network enables remote coverage of the refinery site from roaming vehicles. This allows SAMREF to record safety and security incidents, compare them with previous incidents and keep a video record of near misses. By providing the refinery Incident Commander with a direct view of real-time streaming video from the vehicle he is able to make faster decisions during crisis situations while reducing his dependency on the control room.

Flexibility and security were important selection criteria for SAMREF. Honeywell's OneWireless™ Network deploys wireless access points that deliver flexibility in a single wireless network. Each wireless access point includes three radios – one for communications with traditional transmitters, a second radio for communications with Wi-Fi devices and a third radio for high-speed communications of field data.



Wireless portable tablet computer inside the Incident Commander vehicle.

Wireless networks will make it possible for SAMREF to obtain measurements in remote and hard-to-access locations. Wireless systems also work consistently and reliably in areas previously considered impractical or off limits. In addition, the lower cost per input/output device with wireless can help justify projects not feasible with wired transmitters.

SAMREF was clear in defining expectations of the wireless infrastructure with these priorities:

- Safety: improving plant and worker security.
- Reliability: improving maintenance program and/or reducing maintenance costs.
- Efficiency: managing long distance installations or remote sites with minimal up-front and life-cycle costs.

In terms of performance, the wireless infrastructure has to provide full coverage and the bandwidth to support video streaming from the entire refinery site and specifically the process and tank farm areas. The closed circuit television system (CCTV) must provide live streaming video from a moving vehicle to enable security and control room staff to respond promptly to the routine and emergency situations that take place in challenging environments such as large refineries.

Challenge

From the beginning, SAMREF understood that identifying the right wireless infrastructure at project outset was critical for a successful implementation. SAMREF laid out its “must have” criteria for the wireless infrastructure which was based on the following fundamental principles: security, scalability, a field-proven track record, and experienced professional support. The system selected had to meet the immediate need for mobile video monitoring and serve as the foundation for future wireless applications such as mobile operations, wireless process measurement and other safety solutions. SAMREF management was involved in all aspects of the project from selecting the technology to providing support during the project deployment, to mapping future technology needs.

Solution

The Honeywell Wireless solution deployed at SAMREF provides a comprehensive system consisting of CCTV cameras, Honeywell Digital Video Manager (DVM), and the Honeywell OneWireless Network - all integrated into a common platform supported by Honeywell engineering services. At the outset, Honeywell conducted a comprehensive wireless Radio Frequency (RF) site survey of the sprawling Yanbu export refinery (SAMREF) to ensure that any issues were identified and addressed prior to implementation. Using Cisco* Aironet* 1552S Access Points, Honeywell developed excellent Wi-Fi coverage

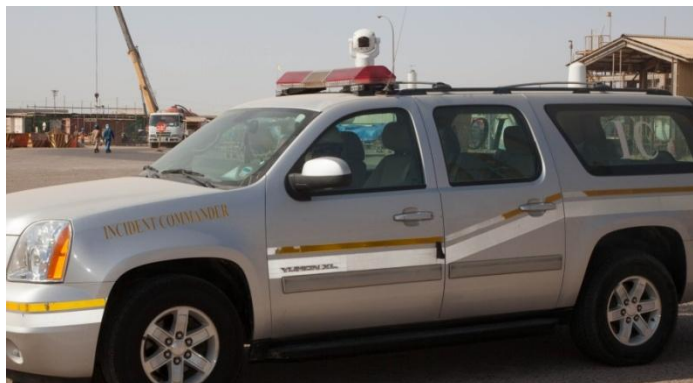
for video applications and addressed provisions for future expansion. Honeywell also provided detailed wireless engineering and commissioning services, documentation and training.

Given that the initial objective was to monitor video images from emergency response vehicles mounted with mobile cameras, a wireless solution was a natural choice for the first wireless application deployed by SAMREF.

Engineering aside, Honeywell provided:

- CISCO 1552S Access Points with integrated ISA100 Wireless*
- CISCO Wireless LAN Controller
- Honeywell DVM
- Wireless PTZ video camera mounted on an incident command vehicle
- Honeywell wireless vehicle-mounted tablet

Honeywell's DVM is a scalable, digital CCTV surveillance solution that delivers increased operational efficiencies, reduced life-cycle costs and improved decision-making functionality. Together with the wireless video camera mounted on the incident command vehicle and wireless vehicle-mounted tablet, Honeywell Wireless solutions provide powerful tools which enable industrial sites to improve efficiencies and safety while reducing costs.



Incident Commander vehicle with PTZ camera mounted on the top of the automobile.

About Honeywell Wireless Solutions

Honeywell Wireless solutions help sites tackle critical industrial challenges in the areas of reliability, safety and process efficiency. The solutions include Honeywell's distributed control system, wireless field instruments, mobile computing devices, wireless network infrastructure, and advanced applications. The solutions also include Honeywell's engineering services such as consulting, design, installation, commissioning, and support which play a key role in ensuring a turnkey experience that protects the customer's wireless investment.

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For More Information

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