Solution:	Ewon Netbiter
Country:	Republic of Yemen
Company:	InPro for Importing
Summary:	Ewon Netbiter allows InPro for Importing to use protocol converter technology to enable all the base stations to communicate freely across the network.

The benefits

○ No data loss if cellular communication fails

○ Online access to processes 24/7

○ Alarms, notifications and reports available anytime, anywhere

○ Easy connection to multiple networks

○ Secure Network connection

InPro
ForImporting

"In future whole industries will maximise productivity with IIoT and Industry 4.0"

Osama A. Nasher
General Manager
InPro for Importing

Nationwide network based on Netbiter keeps vital fuel supplies flowing across Yemen

Netbiter is helping Yemen manage deliveries of diesel fuels across the country, supplying generators at hospitals, potable water pumping stations, and many other important installations.

Yemeni systems integrator InPro for Importing has worked with the government's Ministry for Telecommunications to develop and maintain a reliable nationwide network of 400 base station transceivers (BSTs) to enable real-time monitoring of local fuel supply levels. This allows fuel arriving at the country's seaports to be distributed to those regions in greatest need of replenishment.

Yemen is located at the southern end of the Arabian Peninsular. It has borders with Saudi Arabia and Oman, plus about 2,000 kilometres of coast line and 200 islands. The total land area is around 500,000 square kilometres and the population, currently 27,000,000, is growing rapidly.

The country suffers from near-continuous armed conflicts, which has severely disrupted supplies of water, food and fuel. In an effort to help fix the country's infrastructure, the United Nations is providing $2 billion in aid. However managers need to know which regions have supplies in hand and which need deliveries, which means keeping information up to date and accurate so that supplies are not misdirected - intentionally or unintentionally.

The Ministry of Telecommunications asked Inpro, which has a background in systems integration and remote communications, to develop an internet-based network of local communications hubs or BSTs that can monitor the available fuel supplies. A survey revealed that several suitable BSTs are already installed around the country so it was decided to utilise these, supplementing them with additional ones where necessary.
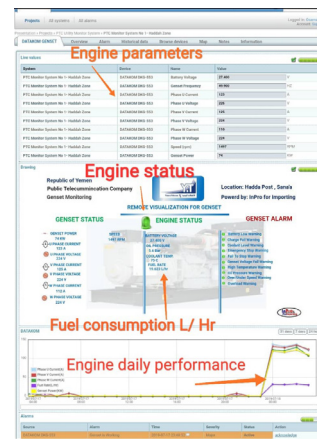
Custom created and designed dashboards for easy view, access and control to the connected hardware devices.

InPro quickly realised that the existing BSTs used a variety of equipment from different manufacturers and also different communications protocols. Thus integrating them would present some challenges; fortunately it had experience of similar requirements on previous projects and knew of several possible solutions.

It would have been prohibitively expensive to specify a standard suite of equipment and protocols and convert all the existing base stations to this. Instead it was decided to use protocol converter technology to enable all the base stations to communicate freely across the network.

In detail, the architecture of the network is based on a new Industrial Internet of Things (IIoT) system that covers the whole of the country and provides 24 hours per day communication. InPro decided to use an Ewon Netbiter as the main router, a product it had used successfully on other projects.

Ewon Netbiter is a complete hardware and software solution that enables remote management of installations online. It consists of Netbiter edge connectivity gateways which allow field equipment to directly connect to Argos, a secure cloud-based IIoT management platform that provides users with customised dashboards, reports, trend analysis and alarm management. With it users can communicate with all the nodes in the network to visualise, analyse and manage plant and equipment all over the country. It has previously been used in power generation, industrial automation, building control, HVAC, water and wastewater, telecoms, security and petrochemical applications.

Ewon Netbiter can support almost any industrial equipment, using Modbus RTU/TCP, J1939 or EtherNet/IP protocols and it has multiple ports for serial/Ethernet or I/O connectivity. It is fully scaleable, so networks can be extended or reconfigured as required.

On the Yemeni fuel project, Netbiter's basic role is to network level sensors that monitor the amount of diesel stored in tanks all over the country, to an accuracy of 0.25%. This data is then mapped out and compared with recent trends and usage reports so that managers can see which areas are most in need of resupply.

The fuel pumps have also been integrated into the network, so that calculations are based on up-to-the-minute data. For maximum effectiveness, the managers retain the discretion to include other external information, such as a request for emergency supplies from a busy hospital, in their decision making processes.

The system is now up and running and Inpro says it is proving to be an invaluable asset in the vitally important function of fuel distribution. In fact it is already in discussions with the Ministry about extending the network and other developments.

Since the Netbiter solution comes with a ready-made GUI, In Pro for Importing can easily set up graphical dashboards which show current values in an intuitive way.

Learn more on www.netbiter.com - www.inproforimporting.net

The Netbiter solution consists of Argos™, a secure IoT managment platform and Netbiter edge connectivity gateways that connect to your field equipment. Once your equipment is connected with the gateway you can simply login to Argos via www.netbiter.net and start to manage your equipment remotely. Argos is a complete and secure cloud-based, Industrial IoT platform consisting of; dashboards, alarm management, trending and reporting features, user access controls and much more.

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