Real-time Met-Ocean Observation System at Zirku Island

MicroStep-MIS Success Story

Tender:	Real-time Met-Ocean Observation System at Zirku Island
Client:	ZADCO - Zakum Development Company
Contractor:	Unique System FZE

The "Real-time Met-Ocean Observation System at Zirku Island" is aimed to serve current meteorological and oceanographic information.

ZADCO

ZADCO's mandate was to develop the Upper Zakum field on behalf of ADNOC and for the benefit of the shareholders in the joint venture, Abu Dhabi National Oil Company (ADNOC), ExxonMobil, and Japan Oil Development Company Ltd. (JODCO).

Besides Upper Zakum, the Company operates in Umm Al Dalkh, and Satah fields. Crude oil from Upper Zakum, Umm Al Dalkh and Satah fields is pumped via main oil lines to Zirku Island for further processing, storage and export.

Zirku Island is located 140 km north west of Abu Dhabi. With its advanced oil and gas installations, Zirku is considered the main industrial base for the processing, storage and export of oil from Upper Zakum, Umm Al-Dalkh and Satah Fields.

The company adopts the latest technologies in developing and operating these oil fields, with health, safety and environment concerns in mind, making it a leading operating company in the oil industry in the U.A.E.

Project Scope

The project scope involved design, delivery and installation of Meteo-Oceanographic Systems in Zirku Island offshore at three different locations: Zirku Offshore Repeater Tower (OSR), Zirku Jetty and Zirku Airport. The aim was to provide a real-time-data for the weather parameters and sea water profiles to enable Zirku terminals, Jetty and Airport to operate safely and efficiently. The site survey on Zirku island conducted on 27 and 28 April 2010 resulted in the requirements of a unique combination of an AWOS and oceanographic measurement.

The versatility of the IMS 4 application software allowed to design the customized system far beyond the standard commercial-off-the-shelf SCADA or AWOS targeting all the needs.

ZADCO - Zakum Development Company

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United Arab Emirates: location of Zirku Island

The final design of the HMI (human-machine interface - real time displays, web screens, etc.) was a result of the discussions between Unique technicians and ZADCO engineers held at Zirku island in March 2012

The maintenance training was attended by different departments. Afterwards, we received positive feedback and high rate of customer's satisfaction.

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All the departments of the Zirku island, to whom this data is beneficial, were actively involved and highly satisfied with the performance of the system. In fact, this data is now being used by the nearby islands, for the reference (as informed by ZADCO engineers unofficially during the visit.)

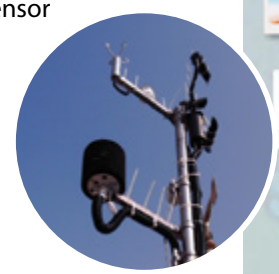
As representative of ZADCO Mr. Mohamed Riad Ismail said *"The users are satisfied with the system and we plan to order similar systems for nearby islands and oil rigs in near future."*

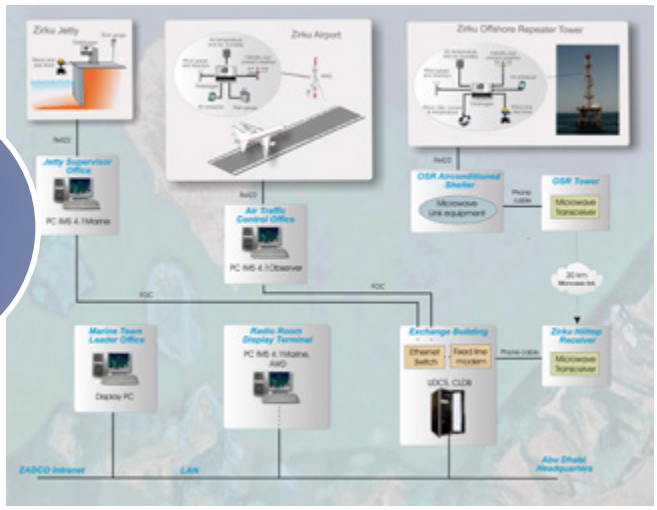
Field Measurement System

The automatic weather stations consist of the data logger, sensors, mast and accessories depending on each site.

There are used following types of sensors:

- ultrasonic wind speed and direction sensor
- temperature and humidity sensor
- pressure sensor
- rain gauge
- visibility and present weather sensor
- wave and sea level radar sensor
- wave and current sensor ADCP





The existing microwave system is used for communication between OSR and Zirku Island. Most of the buildings at Zirku Island have fiber optic network and also LAN.

Challenge

- Supply and install system in harsh marine conditions of Persian Gulf – onshore and offshore locations
- Integration of meteorological and oceanographic observation to one system
- Combination of various communication networks

Our solution

- Automatic weather stations AMS111 collect data from different sensors at three locations situated onshore and offshore
- All measured data are displayed using IMS4 application software at ATC tower, Radio room and Marine Team leader office and also distributed to other client's computers
- Archive is based on reliable and stable Climatological Database CLDB

Achievements

- In March 2012, we have received confirmation of high level of client satisfaction with system performance
- High possibility of extension of similar systems to other locations (islands, oil rigs) in this area

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