

### Al-Faw Grand Port, Iraq



#### PROJECT SUMMARY

NAME: Staging Pier/Eastern Breakwater for Al-Faw Grand Port

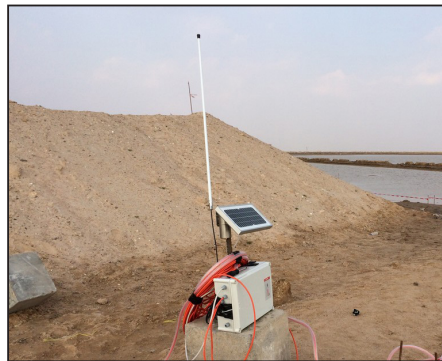
YEAR: 2013 ongoing

CLIENT: General Company for Iraqi Ports

MAIN CONTRACTOR: Archirodon

CONSULTANT: Technital

INSTRUMENTATION SPECIALIST: Geosense



#### OVERVIEW

Both Iraq and the broader northern Gulf region need a fully-equipped deep water sea port with sufficient capacity to handle rapidly growing volumes of international trade. The Iraqi government has identified the existing port of the Al-Faw Peninsula, where the Shatt Al-Arab meets the Gulf, to be developed to meet this need.

The depth of the quays (-17.5 m) will allow the operation of the new generation of container ships. The special quays will be 7,000m long (about 20 berths). The specialist quays for moving dry bulk will be 3,500m long (about 12 berths).

A dredged channel 400m wide and 24km long will connect the new port to the deep water; dredged volumes will be approximately 60,000,000m<sup>3</sup> for the navigation channel and 82,000,000m<sup>3</sup> for the port basins, protected by rubble mound breakwaters approximately 15km long.

As part of the port development a rubble mound breakwater approximately 15km long is being constructed.

#### MONITORING

Monitoring is being carried out on dedicated cross sections in order to measure the degree of consolidation of the foundation soil and the stability of the breakwater embankment.

Multiple push-in type vibrating wire piezometers were installed into the seabed to various depths up to a maximum depth of 19m to monitor pore water pressure in the foundation soil.

As the initial installation of the piezometers was in approximately 4-6m of water, installation was done from floating barges and the piezometers connected to a data logger situated on floating buoys at designated locations. The buoys are located at approximately 1km centres and therefore data retrieval is the challenge.

Geosense proposed the Wi-SOS 400 wireless system which transmits data via radio to distances up to 8km. Wi-SOS 800 nodes were located on floating buoys and the data loggers powered using solar panels. Data is transferred from the node to the gateway using VHF radio with distances up to 8km.

#### PRODUCTS USED

##### VW piezometers

Used to monitor pore water pressures.

##### Wi-SOS 800

Wireless Sensor Observation System for single sensors to upload remotely data direct to the internet.