

Measuring the World and Beyond

Dubai Municipality & DOME International LLC Using SeaSondes to Measure Currents & Waves From Palm Jumeriah to Port Rashid along the Dubai Coast.

Located inside the Arabian Gulf on the Arabian Peninsula, Dubai is home to some of the new millennium's boldest engineering construction projects. Records are being made here, with projects such as The Palm Islands that are the largest man-made islands in the world. The latest project, named "The World" is an archipelago of 300 man-made islands laid out in the shape of an earth map. These "resort islands", located just a few km offshore, will support multi-million dollar dwellings and vacation amenities. Constructed primarily with dredged sand, and positioned with very little spacing between each, understanding water flow dynamics and sediment transport is critical. The Dubai Municipality (DM) established in 1954 is responsible for city planning and infrastructure upkeep, including development, public health and environmental affairs. Decisions made by the DM today relating to the new island development projects will have long-lasting effects on this emirate. Given the gravity of their duties, DM is utilizing the most advanced technologies and expert consultants to help them in the responsibilities they are charged with regarding coast stabilization. The application of state of the art monitoring and modeling tools was identified by the Dubai Municipality as a vehicle for developing an understanding of the prevailing coastal processes and effects of coastal line changes. One of the main aims of the project is to enhance the existing Dubai Coastal Zone Monitoring Program which has been running since 2002 using a variety of technologies monitoring natural processes in the coastal zone. In 2008 the DM Coastal Zone and Waterways Management Section contracted with the company DOME International LLC for implementing a SeaSonde network to continuously monitor the waves and currents along their coastline. System installation and commissioning was completed in December 2008. The outputs of the project includes speed and direction of the sea surface currents in a meticulous manner and also the period, significant height and dominant direction of waves. SeaSonde data outputs are correlating extremely well with other available sensor data from the area, and are revealing the region 2-D dynamics. Data will soon be posted regularly on the DM's official web site: www.dubaicoast.ae.

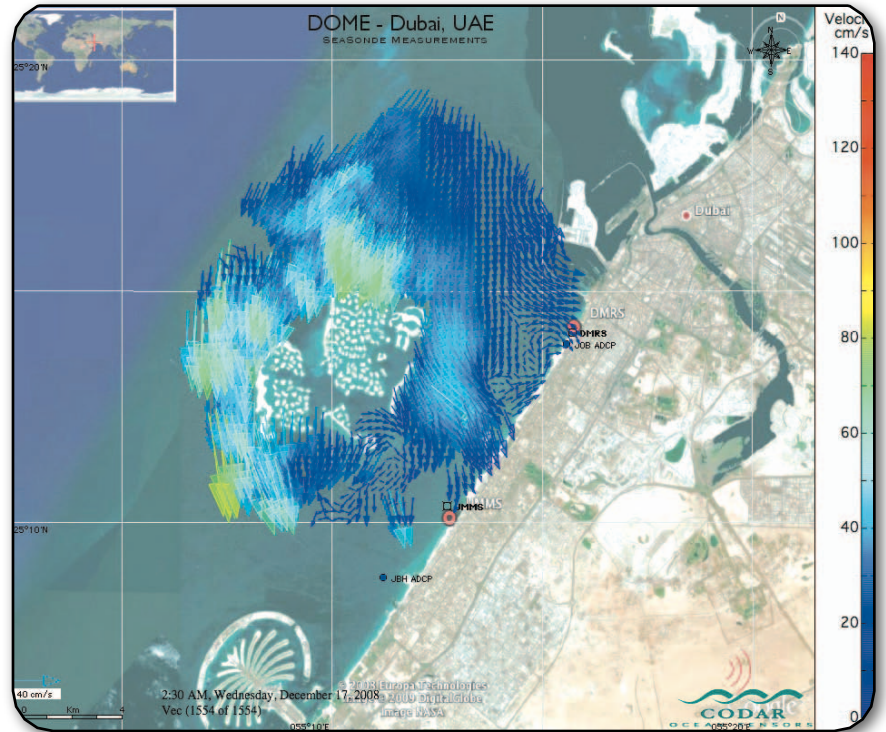


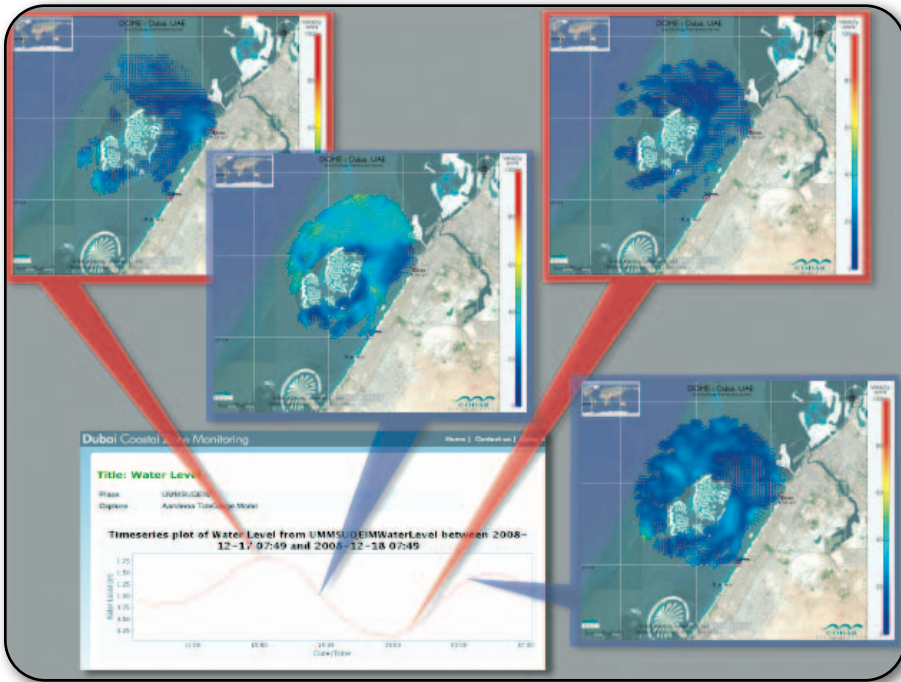
Image shows Dubai coastline and impressive offshore man-made islands: The Palm Jumeriah development (shown at image bottom) and The World Islands development (shown at image center). SeaSonde-produced 2-D surface current vectors are shown surrounding The World archipelago.



Dome International LLC, with 10 offices in the Middle East Region, is a leading health, safety and environment consultancy firm inside the UAE.



SeaSonde antennas in Dubai



Correlation between Umm Suqueim tide station and CODAR total vector currents from DMRS and UMMS.

All Data Shown Are Provided Courtesy of Dubai Municipality & DOME International LLC.



Wave plots of DMRS CODAR data (top) and JOB ADCP wave data on 17 Dec. 2008 (obtained from Dubai Municipality website).