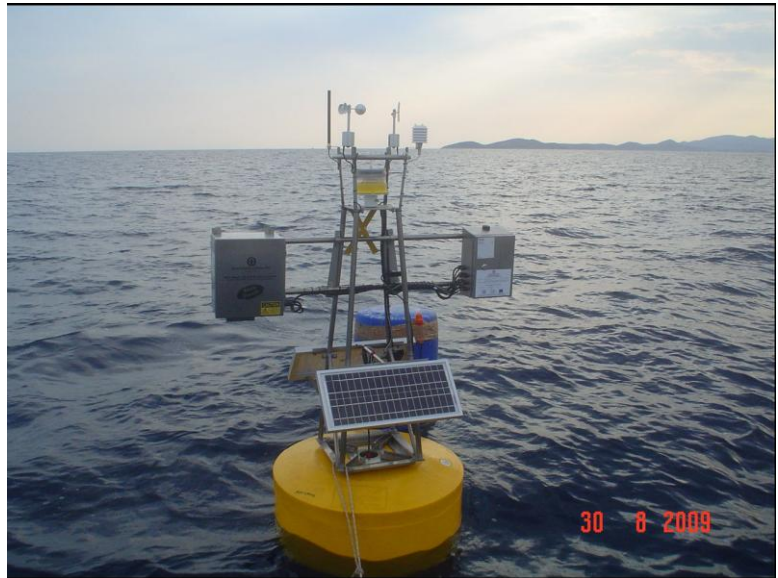


Greek Gov. Agency Uses Unique Marine Data Buoy To Monitor Coastline

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The Ibexis Marine Data Buoy (MDB) is a custom-designed and cost-effective solution that enables real-time monitoring of coastal waters. The MDB was specially designed by Ibexis in response to customer demand. The CAS DataLogger's customer is a Greek government agency responsible for protecting the ocean waters surrounding



the island of Crete. One particular stretch of ocean in this perimeter, located approximately 12 miles offshore, is heavily populated by fish farms but also has a regular flow of tankers and other seagoing vessels passing through. Naturally, the concern is for the potential impact of spillage from a passing vessel on these fish farms and therefore asked Ibexis to design a system to enable the agency to remotely monitor ocean conditions so that they can act immediately to protect the farms in case of a potentially fatal spillage. In response, the singular **Ibexis MDB** was offered to the customer, complete with a range of sensors and instruments that collect ocean data. This data is logged and processed by the incorporated **Ibexis Monitoring Service Point (MSP)**, which then transmits the data via GPRS to the Ibexis gateway which the customer can access to monitor the live data from the ocean through the Ibexis website. In the event of any spillage within the defined parameters, the MSP will quickly send an alarm to the agency by means of an email and SMS.

Applications for the MDB include coastal water pollution monitoring, beach protection, harbor monitoring and fish farm protection, all of which are vital interests to the CAS client in its maritime interests and duties. The **Ibexis Marine Data Buoy** consists of 3 main systems components for ease of transportation, storage and assembly: a **sensor tower**, a **floatation buoy** and an **underwater counter weight**. These components can all be transported and handled separately. Their low size and weight means that they can be handled by a 2-person deployment team without needing a crane and can easily be transported using standard carriers. The sensor tower is made from stainless steel, reaching over 5 ft (1.6m) high and weighing 110lbs (50 kg). It features an upper ring that holds the wind speed and wind direction sensors, the GPS, the cellular antennas, the navigation light, and the buoy cross. The central section of this tower has a horizontal cross bar arm that supports two stainless steel boxes. The first box contains the optional oil-detector sensor, while the second box contains the Ibexis Monitoring Service Point (MSP) which logs and transmits the sensory data via GPRS to the Ibexis gateway where the data is

made available to users via the Ibexis website. The lower section equips two landscape-orientated solar panels. For easy and secure assembly, the entire sensor tower bolts right to the Buoy Flange.

The floatation buoy is a **Norfloat MB350**, measuring a little over 3ft (1m) in diameter with a central cavity and is well-suited for operating in coastal waters. It weighs about 100 lbs (45 kg) and provides a buoyancy of about 770lbs (350 kg). The buoy is water-repellant, providing substantial buoyancy even if damaged or pierced.

The counter weight is centrally mounted under the buoy to provide stability. It measures almost 5ft (1.5m) in length and weighs about 147 lbs (67 kg). The counter weight comprises a central hollow tube with four triangular fins in a cross shape at the bottom to provide viscous drag. It has been solidly constructed from galvanized steel for long life and corrosion resistance. The hollow tube is open at the top and bottom and has small holes to allow for good seawater contact and circulation for the inserted underwater sensors. Sensors attached to the counter weight include pH, dissolved oxygen and air temperature sensors, although CAS / Ibexis flexibly offer to replace and add other sensors to meet all requirements of the end user.

Power is entirely provided by the **dual 20W solar panels** which are placed back to back to ensure optimal solar orientation irrespective of the buoy's orientation. The solar panel angles are easily adjustable for different latitudes at 30, 45 or 60 degrees. We recommend 30° for the Middle East and Africa, 45° for Southern Europe and the Southern USA, and 60° for Northern Europe and Canada. A **20Ah lead acid rechargeable battery** and a sophisticated **solar regulator** are included. Lead time is typically 6 to 8 weeks.

The MDB's 3 units are designed to be assembled onboard prior to deployment; alternatively, the unit can be assembled dockside and then towed away by a small vessel. Due to their small size and weight, multiple units can be towed in "daisy-chain" fashion. In fact, the client found that the MDB is optimized not only for ease of deployment but also for ease of maintenance. The electronics and sensors are easily accessible for inspection and replacement if required, while the electronics and oil detection box protrude beyond the buoy one meter above sea level to provide easy access for dingy-sized inspection craft. Both boxes can slide on and off their rails for easy removal or replacement. For added convenience, the underwater sensors can be pulled straight up through the central buoy cavity for inspection and replacement. When deployed underwater, the sensors are protected by the galvanized tube, which has holes to allow for good water flow, but which are small enough to offer good protection from marine animal attack. The counter weight is dipped galvanized to protect against rust and has an expected life of 10 years.

Equally impressive are the MDB's communications capabilities. Where cellular reception is available, the sensor data and system diagnostics are sent back to secure servers at the Ibexis gateway using inbuilt

GPRS wireless by the Quad Band Modem. The cellular antenna is mounted at the top of the unit two meters above sea level, the optimal height to reduce the effect of sea spray and haze but still benefit from the ground-plane reflection of the ocean waters.

The MDB also represents a breakthrough purchase and deployment cost, with a purchase price typically half that of comparable solutions. Its through life costs are also significantly lower, while installation and deployment costs are typically one-quarter that of anything on the market. As our client found, the MDB is specially designed to allow for easy transportation and installation, further reducing costs of transportation and deployment compared to other marine monitoring solutions. As a result of installing their unique Marine Data Buoy to watch the coastline off Crete, our customer has ensured the safety of its fish farms and ocean waters.

For more information on the [Ibexis Marine Data Buoy](#), [additional Ibexis products](#), or any other CAS Data Logger product, contact a Solution Analyst at **(800)-956-4437** for recommendations specific to your application or visit the CAS website at www.DataLoggerInc.com.

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