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Intelligent System for Boat Mooring Communication

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Bora Bora Marina Sets the Stage for Boaters and Marinas Worldwide with a New Intelligent Communication System for Boat Moorings

Boat moorings are one of the more vulnerable workings of a boat anchoring park. Dock owners around the world face the same problem during the busy season: **Optimizing boat moorings in a harbor.** Like parking spaces on a busy street, open buoy moorings can be hard to find and some are pre-reserved but unused, awaiting the reserved boat's impending arrival. It is therefore important for the harbor master's office to know the status of all the moorings at a glance to quickly gather information on which moorings are occupied, free or reserved and which boaters might have left their reserved mooring earlier than planned. With this knowledge, they can then assign open moorings to boats arriving unexpectedly or without a reservation, and facilitate an easy and safe entry into the harbor.

Faced with this unique challenge of managing moorings in the busy port of Bora Bora, French-based ETM Marine, specializing in mooring systems for over 20 years, opted for an innovative approach - rethinking the technique, use, and management of the existing system in the Bora Bora marina.

ETM decided to create an intelligent system that monitored activities from the buoys through wireless connections that reported back to an administration portal in the harbor office. With the new solution, boaters book moorings and receive updates via a mobile application and online booking portal.

After careful consideration of wireless options, ETM opted for LoRaWAN® technology using a private network model. Utilizing LoRaWAN, the radio performance is very strong, despite the harsh marine environment.

Problem
Optimizing boat moorings in a harbor

Solution
MultiTech Conduit® IP67
Created an intelligent system that monitors boat moorings wirelessly using buoys reporting back to the harbor office.

Benefits
Created an easy to manage marina reservation system that provides constant communication between boat owners and the dock operation managers handling the moorings.

Within this wireless network, it was necessary to select a LoRaWAN gateway that could manage up to a few thousand boats per gateway. The gateway allows the data to flow from the embedded device in the buoy to the management interface. The system also uses Bluetooth for communications between the boater's on-board device to the buoy.

After careful consideration of gateway options on the market, ETM opted for **MultiTech's Conduit® IP67 Gateway**, a ruggedized IoT gateway solution specifically designed for outdoor LoRa® public or private network deployments. Via MultiTech's gateway, the buoy occupancy data is uploaded to the ETM platform where users can access it via a mobile app for convenience. ETM also selected the **MultiTech xDot®**, a long range LoRaWAN compliant module to provide the long-range, low bit rate M2M data connectivity to the sensors, a perfect device for the coastal environment.

The new connected solution has introduced a new way for managing reservations in the marina that is easy to use and provides constant communication between boat owners and the dock operation managers handling the moorings.

A Management & Administration Portal in the Harbor Office
• Adapted, scalable and customizable service
• Mapping of all mooring areas and associated functionalities
• Dashboard and economic analysis of the mooring fleet

A Mobile Application
• Identification of free mooring spaces
• Booking request and direct payment
• Alerts sent directly to the masters office
• Easy to use, location reservation and boat monitoring
• Notifications on request status, location, boat rental, mooring and weather

An Online Booking Portal
• Tailored anchorage rental: long/medium and short duration
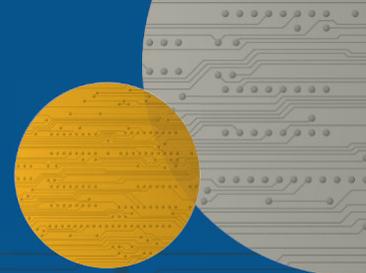• Booking request and direct payment
• Monitoring notifications and alerts

"It was important for us to be able to rely on a robust system as the marine environment is quite aggressive," said Laurent Descos, Manager of ETM Marine. "MultiTech offers rugged and reliable products. Thanks to the compatibility of their module and gateways, all with LoRaWAN frequency bands, it will be possible for us to deploy the solution in any country in the world."

Life has changed for the better at the Bora Bora marina from the harbor master to the boaters who all benefit from a new state-of-the-art communication system that enables them to book moorings seamlessly and monitor all aspects of buoys and boat movements.

"ETM Marine is a recognized player in the demanding sector of mooring systems," said Nicolas Beaudoin, Sales Director for the Southern Europe and France region at MultiTech. "We are grateful for their decision to utilize our LoRaWAN compatible products within the marina's new connected solution while also creating a model for additional marinas worldwide."

For additional information, contact: sales@multitech.com

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Laurent Descos,
Manager,
ETM Marine

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