



# Activity

## Success Story

- Transport - logistics



### LORAWAN-CONNECTED BOATSECURE

December 2016, Belgium

#### Safety and Security Concerns Beneath the Surface

We've all walked by marinas gazing at boats of various shapes and sizes, fantasizing about sailing the high seas or exploring remote seaside coves. But did you realize that for every one of these vessels, moored tranquilly to their dock, there is an owner somewhere constantly nagged by concerns of safety and security?

Boats, especially those left unattended during long winters, can become unmoored and drift away or, more commonly, flood due to a problem with the bilge pump — a device that removes water from the area below the waterline, which can cause serious internal damage and sinking. Even within the safe confines of a marina, staff cannot keep watch over every ship 24 hours, seven days a week, and therefore react quickly enough to access the problem area or notify the owner.

In Auckland, New Zealand, known as the City of Sails with a 3,000-km coastline, there are more than 10,000 boats at moorings and in marinas. That's a lot of worried boat owners, harbour masters and insurers.



**3,000km**  
Auckland's coastline



**AS923**  
New Zealand's LoraWAN band



**10,000**  
Boats at moorings and in marinas

#### BOATSECURE KEY FIGURES

Auckland's Westhaven Marina, "the biggest (marina) in the Southern Hemisphere", according to its website, houses over 1,800 boats. Cam Harris, owner of Beacon Marine, services these boats with all their electrical, electronic and maintenance needs. Needless to say, he is well-acquainted with the challenges of boat-ownership.

For instance, he's the first to tell you that most moored boats rely on solar/wind-powered batteries or shore-connected power to keep bilge pumps operating reliably and items such as fridges and freezers functioning. Winter storms put boat systems under severe pressure, and returning owners, excited for the summer season, don't want to come aboard to find major issues.

Harris recently discussed these concerns with John McDermott, founder of BoatSecure who in turn approached Matt Hector-Taylor, Director of IoT Ventures, who provide software and engineering solutions and LoRaWAN-based IoT devices to businesses in virtually any industry.

IoT Ventures' approach is to examine a problem in close collaboration with the client and agree upon a solution even before its production. "Unless there's a real problem to solve," says Hector-Taylor, "there's no point to the Internet

of Things." This philosophy underscores the practical aims of IoT Ventures' devices and solutions.

#### A Beacon of Opportunity

Both Harris and McDermott are extremely optimistic about the future of BoatSecure. The wireless components are inexpensive, driving down the device's purchase price; the network connection is also low-cost and reliable; the intuitive dashboard and smartphone app design ensures that owners can easily and comfortably check the status of their boats. Furthermore, network partners Spark NZ and Activity are able to roll out their services to new locations.

For Harris, in particular, a service providing an automated monitoring system allows him to increase revenue for his business while improving customer service.



These kinds of results should guarantee the spread of such solutions to other local markets in New Zealand and onward to Australia as demand grows. It is not hard to imagine further expansion to Europe and the Americas, where the recreational boating industry is surging.

## BoatSecure Keeps An Eye Out For Trouble

You can easily imagine the response of a harbour master, marina electrician and boat owner upon hearing that there is an inexpensive, easy-to-install sensor and mobile application that monitors a boat 24/7 and sends alerts when anything is amiss, wherever you are in the world. This solution constantly checks that batteries are charged and at the right voltage, the bilge pump is operating normally, the boat has not strayed via GPS-tracking and, should anything unintentional occur, send you, or a designated responder, an immediate alert.

McDermott describes BoatSecure as “a boat monitoring solution that keeps an eye on your boat when you can’t.”

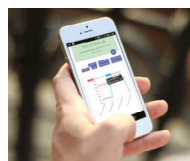
Of course, there’s more to it all than meets the eye. For BoatSecure sensors to function practically, they must transmit information over long distances, sometimes from remote locations, and their batteries must operate for years. 3 or 4G networks are not an option as they are not reliable in these scenarios and would drain the batteries quickly regardless.

“Boat owners love playing on their boats and buying new kits. BoatSecure solves a real problem and gives peace of mind that their boat is ready to go whenever they want.”  
*Cam Harris, Marine Electrician*

With a view to facilitate the functionality of these IoT solutions, Spark NZ has partnered with Actility to provide a LoRaWAN connection. Conveniently, one of their first connected sites is Auckland’s centrally located Sky Tower, which covers most of the city’s water areas and can now connect BoatSecure devices to the cloud.

Harris has just recently installed the first device in a trial boat and is impressed how easily the LoRaWAN signal is able to penetrate the cables and cabin whereas 3G is known for its difficulty. Connected to the battery and bilge pump, BoatSecure constantly monitors its own inputs and transmits hourly “reports” to his phone.

Harris has already confirmed the reliability of the LoRaWAN coverage. In fact, just a week before, there was a 48-hour power outage throughout the marina with 20% of boats losing power. As soon as the outage occurred, a notification appeared on his phone.



Owners can monitor the status of their boats and receive alerts with an intuitive app on their smartphones