

Case Study

Customer : Associated British Ports (APB)
Product : SX450G
Application : Tidal Telemetry System
Industry/vertical : Transport

Monitoring river tides

Company

Associated British Ports (APB) owns and operates 21 ports in England, Wales and Scotland. ABP handles approximately a quarter of the country's seaborne trade. The group's other activities include rail terminal operations, dredging and marine consultancy.

Issue

Formed by the Rivers Trent and Ouse, the Humber river is one of the largest deep water estuaries in England. The channel is 35 miles long and stretches eight miles at its widest point. Spanning the river near Kingston-Upon-Hull is the 2,220 metre long Humber suspension bridge.

With five large ports – Kingston-Upon-Hull, Grimsby, Immingham, New Holland and Killingholme – located along the estuary and an abundance of waterside industries, the river attracts a heavy volume of shipping trade and sea traffic; the estuary's vast size means the largest deep sea vessels are able to navigate its waters.

Today's cargo boats are bigger, taller and deeper than ever before and with increased shipping traffic, navigating river ports has become more hazardous. Knowing the right time to safely travel under a bridge is critical; high tides allow for less space to move under the bridge while low tides can cause vessels to run aground.

Another problem facing cargo vessels is the build-up of sediment on the river bed. The shifting tides cause sediment to accumulate in areas along the river, causing boats to potentially run

aground. To avoid this happening, dredging boats travel up and down the river excavating silt to level out the river bed.

For boats to navigate safely along the river at the correct tide height and dredgers to identify the problem areas, ABP fitted 19 tidal gauges from the sea up to 75km inland along the Humber and up the Rivers Trent and Ouse. These tidal outstation monitor the height of the water, streaming the data to a base station situated on the Humber Bridge. Once the tidal information is polled from the remote tidal stations, the base station then broadcasts the data to a number of receivers located along the river. This information is then communicated to the relevant vessels.

ABP was looking to upgrade the existing system with more effective, reliable and resilient wireless radios. To this end the company approached Wood & Douglas.

Solution

With the location of the numerous tidal outstations spanning many miles, a dependable and powerful wireless radio was required. Wood & Douglas the SX450G transceiver radio, a low-cost but high spec module designed for data and telemetry transmission. This radio is flexible enough to install seamlessly into an existing system.

With the outstations the receiver stations positioned in remote estuary and river wetlands, these 'fit and forget' radios have a durable design, able to withstand the harsh vagaries of river life while requiring minimal maintenance.

- Critical wireless transmission of tidal height data from gauge outstations riverside receivers
- Sensitive receiver and robust transmitter circuitry allows fir reliable performance over short and long distance.

