



## CASE STUDY | DELIVERING CONNECTIVITY TO VESSELS IN NAVANTIA SHIPYARDS

### WIFI.TEAM

Wifi.team is a company that provides wireless solutions in very demanding environments. Formed by a team of people with a combined 10 years of experience in this sector, wifi.team has accumulated the necessary knowledge to find the most appropriate solution by studying each individual case and adapting the best equipment for each.

**"RF elements products offer very compact form factors with easy installation and aesthetics without compromising efficiency."**

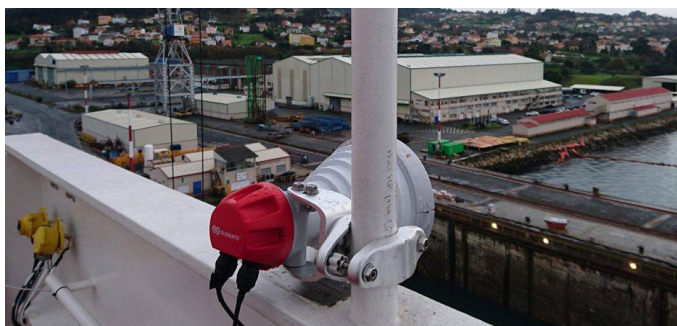
Miguel Couce, WIFI.TEAM CTO

### REQUIREMENTS

The main goal of this project was to find a solution for providing internet connectivity to ships that arrive in the yards for repair. The challenge was to provide seamless wireless connectivity on each of their multiple decks.

The solution needed to be scalable, adaptable and easy to deploy since the average repair time for ships is around ten to fifteen days.

Shipyards in Navantia have very demanding weather conditions due to its location on the seashore: constant humidity, lot of rain, mist and salt. The provided solution needed to survive in this environment.



### WISP PROFILE

Name: wifi.team

Location: Narón, Spain

### DIFFICULTIES

The location of the shipyards, situated on both sides of the Ría de Ferrol, makes it difficult to provide internet connectivity from a single point on the ground. The signal has to be delivered via a wireless link to each of the boats.

Moreover the ship's metal parts work like an RF insulator and make the propagation of the wireless signal in certain parts of the ship extremely challenging.

**"RF elements HORNS offer better result than much more expensive sector antennas."**

Miguel Couce, WIFI.TEAM CTO

### TECHNICAL SOLUTIONS

Two connectorized 30 ° Horn antennas (SH-CC 5-30) together with two Mikrotik NetMetal5 radios were deployed at a single point on the ground in order to reach both parts of the shipyard on both sides of the river. A 30 ° Symmetrical Horn Carrier Class antenna with a Mikrotik NetMetal5 radio were deployed on the other side of the link, on the deck of each ship that arrived at the shipyard.

Once the signal was delivered to the ship it needed to be distributed all over the vessel. In order to do it wifi.team used a different solution. They deployed RF elements® StationBox® XL CARRIER CLASS 2.4 GHz together with a Mikrotik RouterBoard RB912UAG-2HPnD on each deck where connectivity was needed, providing full coverage to all decks of the ship. That configuration was deployed with success

on ships up to 300m long and 55m high.

**"RF elements provided us all the tools that we needed, regardless of the type of installation, there is always an antenna that fits our needs."**

Miguel Couce, WIFI.TEAM CTO

## RESULTS

A stable 45Mb/s of connectivity was successfully delivered to each ship and complete wireless coverage was available on all decks with up to thirty people simultaneously connected per deck. There were no signal loss or performance complaints. Without a doubt the quality of the Horn Carrier Class antennas in providing a stable signal without interference and their collocation capabilities were the main benefits compared to other solutions. With Carrier Class Horn antennas wifi.team obtained better results than with traditional sectors or parabolic dish antennas. The deployment of the StationBox XL CC antennas was also very successful. Wifi.team also tested other solutions, combinations of omnidirectional and panel antennas, but the best aesthetic, functional and signal quality results were obtained with the RF elements products.

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<https://www.youtube.com/user/RFelementscom>

