



LiFi: Secure Wireless Connectivity

Barnacle Systems has achieved a significant milestone in testing a secure and seamless wireless network for use onboard ships, utilizing LiFi technology. By integrating hardware from leading industry players such as pureLiFi, Barnacle assessed the ability of LiFi to provide wireless connectivity in various forms, across a range of power and data supply methods.

[Get a Demo](#)

In Partnership With



Project Details

Secure and Seamless Wireless Network



The latest computer-generated image of the Type 26 Global Combat Ship. (Royal Navy)

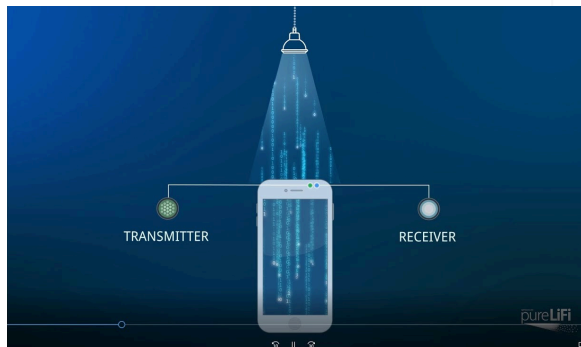


Image courtesy of PureLiFi

communication with the growing number of wireless sensors and systems onboard Royal Canadian Navy warships. The aim was to enable reliable tracking, monitoring, updating, automation, and operation of these systems in a variety of situations.

As the Government of Canada adds new warships to its current fleet of naval vessels, it plans to make the most of new and upcoming technologies and have communication with new devices, systems, and machinery that use wireless communication methods. Right now, the current ships depend on wired communication systems that run throughout the ship, but these would have to be updated or added with wireless technology to take full advantage of the latest sensors and systems.

It's more challenging to communicate digitally on these vessels because of features like steel compartments that block signals and small spaces that need different levels of security. It's also important to make sure no signals can be used by anyone beyond the confines of the ship, and that communication remains operational even in tough conditions like smoke or contaminated water.

Proposed solutions for this project needed to demonstrate the ability to maintain seamless connections with devices moving between compartments, in a variety of channels, in all conceivable weather conditions and sea states.



Project Outcome

BRNKL Black: LiFi Integration for Babcock Canada

Barnacle Systems was leveraged to support Babcock Canada's effort in developing and testing the seamless communication of sensor data over a LiFi network and WiFi network simultaneously. The tests aimed to assess the ability to provide wireless connectivity in WiFi, LiFi, and both WiFi- and LiFi-enabled environments, allowing them to gauge each network setup and determine which of those tested offered the most practical solution. The tests were designed to mimic a variety of common setups as well as those assumed of naval platforms.

To demonstrate that sensor data can be viewed in real-time from a tablet that is traversing from a room with only LiFi connectivity to a room with only WiFi connectivity, Barnacle's IoT hub, BRNKL Black, was leveraged.

The BRNKL Black acted as the sensor data-collecting device, integrating with the PureLifi USB dongle to:

- Detect the PureLiFi USB dongle as a TCP/IP network, and
- Transmit the BRNKL Black sensor dashboard over the LiFi network to a PureLiFi-enabled tablet's web browser.

