

## Innovative Research Solutions with Industry

Fisheries

**CLIENT:**  
McBride Fishing

**AREA:**  
Software



lyit

Institiúid Teicneolaíochta  
Leitir Ceanáin  
Letterkenny Institute  
of Technology

## A wireless counting based system to monitor crab fishing



Institutes of Technology Ireland

An innovative solution is being developed by the WiSAR Lab at Letterkenny Institute of Technology (LYIT) that has potential to revolutionise the Irish fishing industry. A wireless based counting system is being developed which will monitor crab pots and numbers of crabs as they are caught or discarded.

This wireless system is being designed to monitor the entire crab fishing process. It will count and record the number of fishing pots deployed during the hauling operation, the number of crabs caught, and the seabed temperature, location and depth readings using various wireless and GPS technologies. The system will require sensors on each pot with readers designed to count pots as they leave and return to the boat. Chutes in the deck will be fitted with sensors to count crabs as they are returned to the seas or put into the tanks. All this information is relayed to the wheelhouse to allow the captain to monitor catch.

McBride Fishing Ltd, Donegal, a family business, experienced an on-going problem of losing crab pots which has major implications for cost and efficiency. The company approached WiSAR Lab at LYIT in 2012 to investigate if there was a way technology could be used to solve this problem. After a number of discussions, WiSAR Lab identified a new wireless solution for the problem.

WiSAR Lab has many years' experience in developing innovative wireless solutions for industry and specialises in wireless Body Area Network research. The added challenge to this



Brian McBride, Captain of Peadar Elaine II; Dr Jim Morrison, WiSAR Lab; Dr Nick Timmons WiSAR Lab; Pete McBride Company owner; and Sufian Al Aswad, WiSAR Lab Manager

project is brought by the harsh conditions on the deck, offering a wet and salty environment. The sensors mounted on the pots must also be cost effective yet sufficiently robust to survive on the seabed for up to two weeks.

Dr. Nick Timmons, WiSAR Lab Principal Investigator explains, "The introduction of wireless sensor technology into the fishing industry is in itself innovative. Developing an accurate counting system for fishing pots, caught crabs, sea bed temperature readings and GPS mappings, is ➔

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- going to play a major and vital role assisting the Irish fishing industry in shaping future strategies.”

“It’s great to see cutting edge technology being applied in a novel way,” adds Michael Gallagher of Bord Iascaigh Mhara, commenting on the McBride Project, “If a solution is found within this project then it should have wider applications. McBride Fishing Ltd. is constantly innovating, both on board their vessels and onshore, to improve their business. This is key to their success, as they are marketing a challenging product – essentially they have to get their living product to as far afield as China! I think there is real scope for the fishing industry to develop further projects with WiSAR Lab and other high tech solution providers to resolve many issues and add real value to the sector”.

Peter McBride Jnr of McBride Fishing outlined some of the system’s potential uses, “When completed, this technology will generate daily/ weekly reports that will create a stock take of our crab pots allowing us to maximise man hours. Previously this would have been a manual process. This technology will allow us to gauge both the lifespan of the crab pots and of our ropes, which in turn lets us focus on the best equipment available, thus both keeping costs and wastage at a minimum. This technology will also count the number of crab coming into the vessels and also returned to sea alive giving us exact percentages of caught crab. This should allow us to see where the more beneficial fishing grounds are and to focus on them, saving fuel, bait etc.

This is a very exciting venture for our company and particularly the younger members of our team as they will be able to see the statistics form in front of them giving them a better fishing database and knowledge.” ■

## TESTIMONIAL

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**Peter McBride Junior**  
*McBride Fishing*

*“Getting the backing of Enterprise Ireland has made all this possible, and we would like to thank all involved. It’s also fantastic to have WiSAR Lab on our doorstep, and nothing seems to be a problem that can’t be overcome. It’s a new exciting time for us and the engineers involved.”*

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