



Civil engineer Jens Andresen of DEVELCO in Aarhus and Jacob Pedersen, Technical Organisation, on board Ark Dania where they placed the LoRa transmitters to investigate the opportunities in the LoRa wireless data transmission technology to speed up digitisation of ships and ship operation.

Jacob Mygind Pedersen from Technical Organisation - Projects has spent two days with the Aarhus engineering company DEVELCO on board Ark Dania to find out if a brand-new signal transfer technology can be used on board ships. The potential is vast. Read more about the exciting LoRa technology below.

By Jacob Mygind Pedersen

LoRa (Long Range Radio) has been developed to transmit the data of the Internet of Things around the smart cities of the future where everything communicates and contributes to large amounts of data (big data). But why not use the technology to transmit sensor data on board and to and from ships - such as sending emission data directly and continuously to the authorities - localise trailers in the terminals or start and stop pumps and other equipment without the need for expensive cables?

I considered these questions after reading about this technology online. In line with the general DFDS strategy to haul our on-board systems down the information highway in order to analyse and work smarter with our data, the project department moved quickly to



The future at sea is by air: Wireless data transfer technology can pave the way for new digital trends

implement their ideas. They were spurred on by the low-priced compact devices easily retrofitted on a vast array of systems capable of receiving and transmitting all current types of digital and analogue signals.

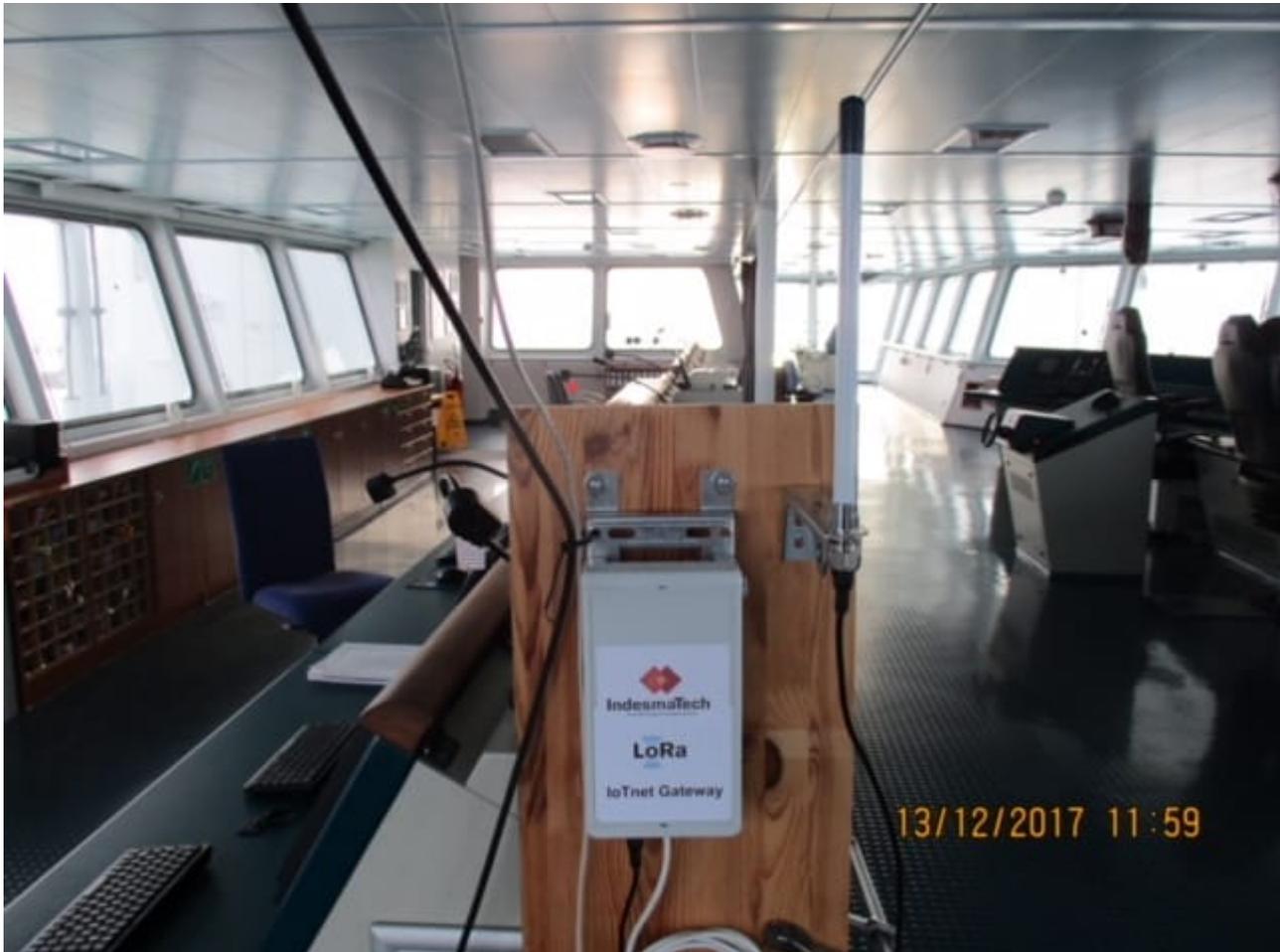
The challenge at sea has always been the many tonnes of steel that can block wireless signals. The tests on board Dania indicated that the LoRa signals can travel unobstructed despite the steel barrier. As part of the test, sensor data from the bow thruster room was transmitted to a LoRa gateway on the bridge and despite 0.02 W transmitting power, the data was successfully sent through steel, cargo, air and the windows of the bridge to the gateway.

DFDS are pioneers

Why haven't we started using this technology a long time ago and why haven't we purchased devices for installation on frequency converters, lights, GPS, AIS, trailers and other things? Well, the answer is simple: These devices do not exist yet. We are the first to conceive of this technology in a maritime context and if we want to use it, we first must develop the components.

In this way we are once again the proven frontrunners of the digital world and it is up to us to lead the development. We are the only ones who can. We are also more than happy to take the lead in cooperation with our partners but if we want to be at the front, we must run faster than everybody else because no-one will carry us.

The Dania test has shown us the potential of this technology. The entire ship can be covered and neither steel in deck or bulkheads nor the worst noisemakers in the engine room could keep the data from reaching preselected locations onboard. We have the blueprints for devices capable of receiving and transmitting all sorts of signals and our next step is to flesh out the production.



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