

Connected Aquaculture Use Case

Situation

There are currently thousands of people working offshore across a range of industries. A large majority are affected by the lack of affordable, reliable connectivity. Beyond the obvious safety implications, not being able to communicate with friends and family or access the internet as we do on land can have vastly detrimental effects on the wellbeing of workers, which has been recognised in an incoming international requirement for access to internet for seafarers.

The continuous stream of people and vessels transferring information between the shore and offshore locations is also contributing immensely to carbon emissions. Unknown real time weather conditions and the inability to send emails or electronic documents impact operational efficiencies that would be improved with live information and high-speed internet connectivity.

Task/Action

JET Connectivity has built unique floating 5G and live data systems, specifically designed to meet the above challenges. Users connect to the robust 5G network without the need for specialist equipment and are immediately able to use internet and voice capabilities. The platforms also host a range of sensors which relay their data live over the network to give a real time picture of the sea state, weather, and other environmental factors. These can be used to reduce the reliance on carbon intensive vessels to collect and deliver the information.

JET's in house built 5G systems are hosted on bespoke buoy platforms to deliver specific services to the users and location, which could include focusing on highest bandwidth or widest area coverage possible, depending on the use case.



Image © JET Connectivity - JET-4 Babel, JET's first base station platform deployed in Dorset in 2022

Results

Jet has done trial deployments of small data collection platform and mid-sized base station platform which were both successful in connecting to on-land 5G. The results so far have shown which platform is best for different uses and sea environments. They are now developing a much larger platform which will be able to provide buoy to buoy 5G as a base station mesh for year-round deployments around the UK. This will be a fully self-powered, fibreless 5G network designed to provide robust, pop-up connectivity in harsh offshore environments.

Why 5G?

The hook of 5G that other technologies can't do 5G has several benefits and the possibilities are huge because 5G is more than just one thing, it can be set up in many ways depending on the specific use. One of the major benefits of standalone 5G is the ability to slice the network so Jet could give priority access to the emergency services for rescue missions, for example, so if the network gets busy with lots of users, they would retain the best connection. Another reason they are focusing on 5G is because it can enable huge amounts of data from IoT devices, autonomous robotics, or Ultra HD video to be streamed in real-time. This means Jet are ready for the growing requirements of bandwidth for uses such as autonomy and robotics in offshore maintenance.



Image © JET Connectivity - the JET team celebrating the deployment of JET-4 Babel