# Plug and play

by Fitzwilliam Scott

**ioCurrents, a data analytics specialist, and ScanReach, a maritime wireless Internet of Things solution provider, have formed a strategic partnership to help ship operators and the offshore sector become more efficient and sustainable while safeguarding the safety of their personnel.**

ScanReach has spent years researching and testing its systems to confidently offer the industry a robust wireless technology that will collect vessel data from onboard sensors without costly and disruptive equipment installations. The company's wireless technology has been specifically developed for industry environments made of complex and confined steel environments, such as oceangoing vessels, offshore rigs, and wind turbines out there in the open sea.

The data collected by ScanReach is sent to the cloud and analysed by ioCurrents using artificial intelligence (AI) and machine learning to provide insights that will improve the safety and performance levels aboard vessels and on offshore installations. These real-time data sets allow ship operators to make informed decisions on key performance criteria like vessel voyage planning, maintenance schedules, and personnel safety. Depending on client requirements, alerts can be set up to notify operators on a variety of indicators.

## Reliability-centred

The ioCurrents-ScanReach partnership will help to transform a client's maintenance planning from engine hours or calendar-based travel to data-driven decisions based on behaviour. By harnessing AI and machine learning, the ioCurrents system learns from each asset's behaviour, alerting the client to any unusual outcomes that may need attention.

This analytics technology can also be used to predict equipment failures after it has monitored a vessel's performance for as little time as a month. It does this by having AI automatically generate machine learning models that monitor assets for malfunction, identifying anomalous behaviour. As a result, decisions can be made in advance as to when and where to repair or replace parts, minimising downtime and the need to scramble to organise an expensive emergency spare part shipment.

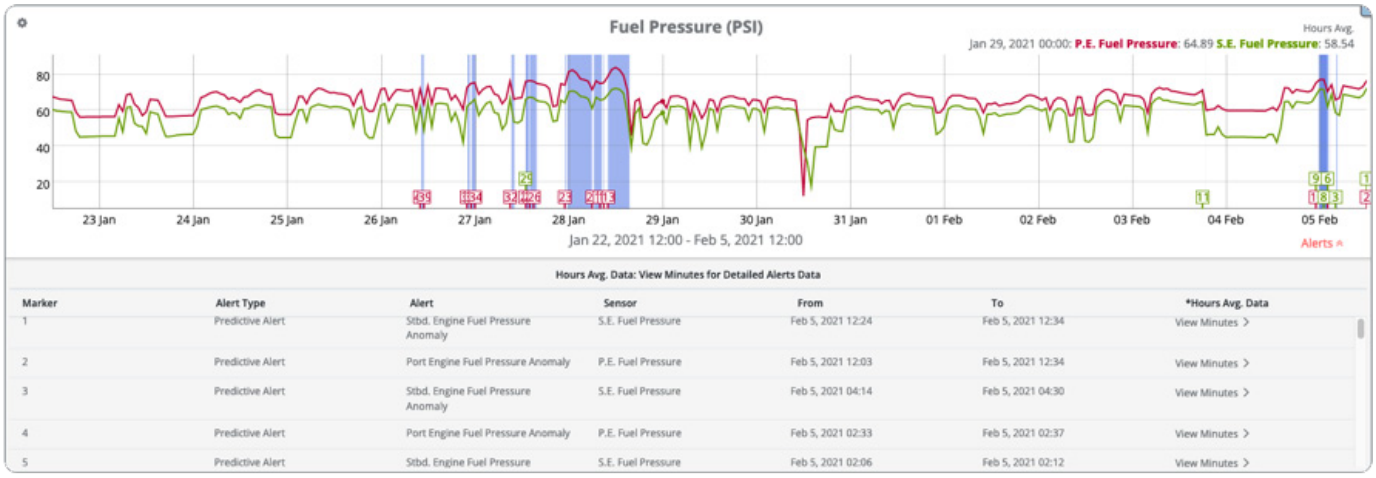
A prime example is high-pressure diesel fuel pumps that can fail suddenly, ejecting metal and causing severe engine damage. Western Towboat, a customer of ioCurrents, has gone from multiple failures per year with high-pressure fuel pumps to zero in four years using this predictive technology.

Similarly, by analysing live fuel burns and fuel flow data, crews can make strategic decisions on adjusting voyage routes to improve fuel efficiency, which will have the bonus of reducing greenhouse gas emissions. One example is that ioCurrents can alert shoreside teams and the master when vessels run idle for over two hours to reduce wasted fuel, carbon build-up in the exhaust, and unnecessary hours on equipment. Consequently, this 'heads up' can change a fleet's behaviour, encouraging captains to shut engines down when they know they will be waiting for extended periods. This will lead to reduced idle times, avoiding fuel burned unnecessarily, and prevent engines from running in their worst revolutions per minute bands to optimise the reliability-centred maintenance plan.

## Saving – time & lives

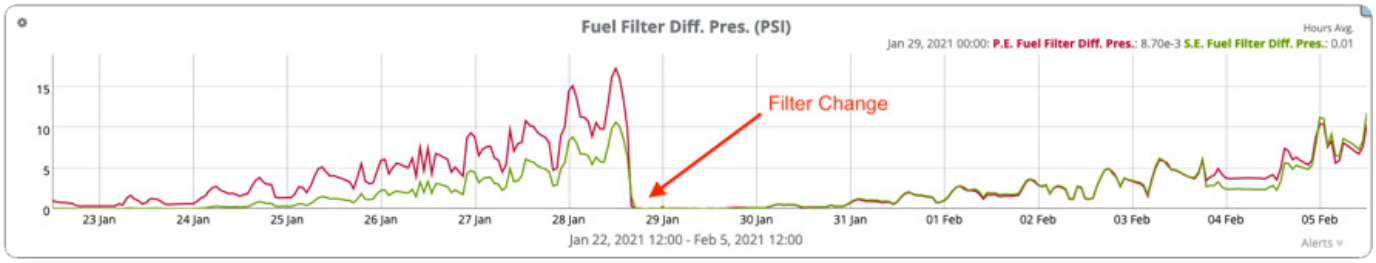
ScanReach's technology can also be used for onboard personnel tracking and location pinpointing during emergencies to aid precision rescue team involvement and mustering counts. Each employee wears a wristband that can be activated in an emergency so the master or senior personnel can view their approximate location on a screen. This saves time and could be lifesaving by cutting down the duration that a rescue team requires to reach those needing help.

Also, this technology is expected to become particularly useful for offshore




Hours Avg. Data: View Minutes for Detailed Alerts Data

| Marker | Alert Type | Alert | Sensor | From | To | *Hours Avg. Data |
|---|---|---|---|---|---|---|
| 1 | Predictive Alert | Stbd. Engine Fuel Pressure Anomaly | S.E. Fuel Pressure | Feb 5, 2021 12:24 | Feb 5, 2021 12:34 | View Minutes > |
| 2 | Predictive Alert | Port Engine Fuel Pressure Anomaly | P.E. Fuel Pressure | Feb 5, 2021 12:03 | Feb 5, 2021 12:34 | View Minutes > |
| 3 | Predictive Alert | Stbd. Engine Fuel Pressure Anomaly | S.E. Fuel Pressure | Feb 5, 2021 04:14 | Feb 5, 2021 04:30 | View Minutes > |
| 4 | Predictive Alert | Port Engine Fuel Pressure Anomaly | P.E. Fuel Pressure | Feb 5, 2021 02:33 | Feb 5, 2021 02:37 | View Minutes > |
| 5 | Predictive Alert | Stbd. Engine Fuel Pressure | S.E. Fuel Pressure | Feb 5, 2021 02:06 | Feb 5, 2021 02:12 | View Minutes > |



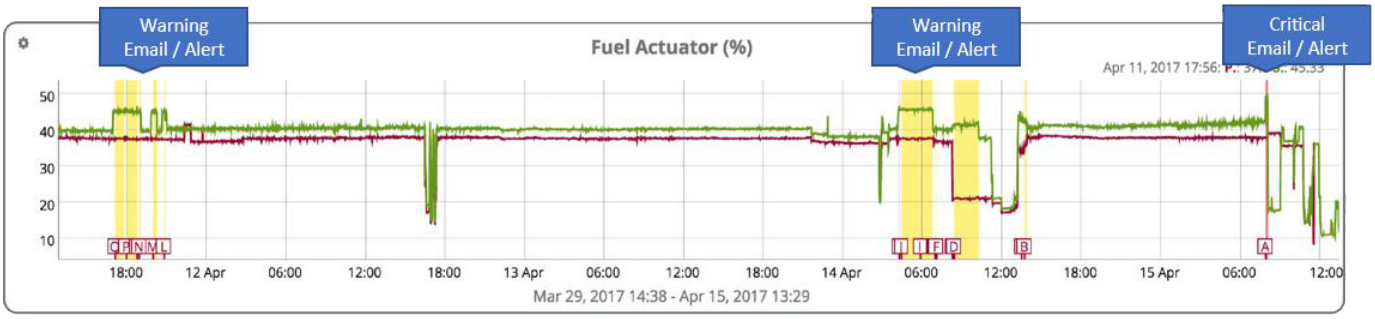







Photo: ScanReach

platforms as it can replace the manual clocking-in of staff. Any onboarding personnel wearing a wristband will be immediately logged as being present as soon as they enter the facility. ScanReach is already proven on ships, awaiting their first offshore platform installation pilot. Some companies also use this system to automate their walk-to-work gangway registration (e.g., to wind turbines or diver operations).

ScanReach's wireless solution makes data collection much more straightforward than installing miles of cabling on a vessel or offshore platform, meaning less downtime for the operator. The ScanReach system can be installed in a few days rather than the weeks needed to run cabling around a vessel or offshore installation. Their tried-and-tested technology works on even the most complex steel environments, and their 'plug and play' solution means that clients can do the whole set-up themselves with minimal operational disruption.

## Teamwork

By working together, ioCurrents and ScanReach are providing their clients with actionable insights to help them improve their operational efficiency and, in doing so, reduce their impact on the environment. Equally, the technology also has the safety and welfare of crews as a priority, pinpointing the approximate location of personnel in emergency situations and reducing the time and risk taken to mount rescue operations. ■

ioCurrents Digitisation gives you the data. ioCurrents' MarineInsight™ platform tells you the story. Through purposeful digitisation, we tell your team when, where, and why to pay attention to each asset on each unique vessel, offering the opportunity to gain efficiencies across fuel, maintenance, and voyages. Head over to **iocurrents.com** to discover more.

SCANREACH Onboard Wireless Connectivity ScanReach's wireless IoT platform is custom developed for industry environments made of complex and confined steel environments such as vessels, rigs, and offshore wind turbines. The company aims to increase personnel safety and vessel performance with its solution, contributing to a more sustainable future. Go to **www.scanreach.com** to dive into more details.