Case study

Royston diesel power

Sector Architects, Engineering & Construction
Service Bespoke Software

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Navigating an ocean of data at the click of a button

Royston provide monitoring solutions for global shipping. They've got a proven record of reliable, innovative, and transformational services. Key amongst these is "enginei" - a comprehensive onboard data collection system, with a rich seam of engine performance statistics waiting to be mined. So, when Royston needed a web platform as enginei's latest service offering, they knew we'd be excited to help.

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Using digital technology to understand and optimise performance

The world's most influential organisations are using data to inform their decisions and improve the way they work. Royston is no different. Specialising in vessel monitoring for the global shipping industry, our journey is a story of close collaboration and exciting challenges, as together we turned an ocean of data into a powerful business asset.

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Designing the Solution

The robust data backbone in enginei gave us a great starting point thanks to Royston's in-house development team. We're always happy to partner with another development team, and this was no exception. They'd ensured that the data would arrive in near real-time where possible: whether by WiFi, mobile, or satellite. Of course, there are times when real-time communications aren't possible across the globe. When that happens, data is stored onboard and sent to enginei as soon as connection comes back – resulting in rapid transfers of data. So, to cope with those peaks in demand, we designed a bespoke backend solution using auto-scaling serverless Azure Functions. Royston rely on this to shape the incoming data securely and rapidly.

Perhaps our most exciting challenge was to bring that data to life. Collaborating closely with Royston's people, we developed an engaging and highly marketable web-interface for surfacing vessel and asset data to each of their customers. Dynamic projection onto a bespoke mapping visualisation gives the enginei web platform a distinct look-and-feel, giving real strength to the brand. We made interactivity a central theme through technologies like React JS.

In addition to the mapping visualisations, data is presented in configurable user dashboards. These dashboards monitor live and calculated parameters such as engine speed and load, fuel usage, vessel speed and location, emission, power outputs, tank levels and other metrics.

Raw data can be handled in two ways. Exported to be explored further in Microsoft Excel. Or, integrated with a customer's other systems to provide customer tailored business intelligence. Integration with mapping software allows vessel tracks and location history to be easily viewed with other parameter visible in a single view.

Tailored to Benefit the Customer

We've already mentioned configurable user dashboards – this is really important, because Royston's marine customers have diverse needs. The onboard systems of enginei are customised for each vessel, and it's the same with the data analysis and visualisation. A very real benefit to Royston's customers is the ability to monitor fuel consumption across their fleet. And the enginei web portal gives them clear visual signals for optimising vessel speeds, reducing emissions, and reaching optimal running costs. The fuel savings alone are considerable.

As part of our trusted partnership with Royston, we've continued working together to add more features into enginei. Royston really are in-tune with their customers, and always looking towards what their future needs may be. We love this approach. Recently a flagship feature of CO2 modelling has been introduced – something which really benefits the demands of today's responsible and progressive marine operators. Royston also asked us to develop a powerful key performance indicator (KPI) system, so that their customers can create metrics that are highly tailored, yet simple to understand. And in keeping with the principle of interactivity and visualisation, we built a user experience that guides people smoothly through the KPI creation process.

With reliable and consistent data always available at the click of a button, Royston's customers benefit in so many ways. Reduced costs and improved efficiency prove effectiveness which can help them win new business; provide data to their own customers on performance within their business, and demonstrate their commitment to environmental responsibility through emissions monitoring and reduction.