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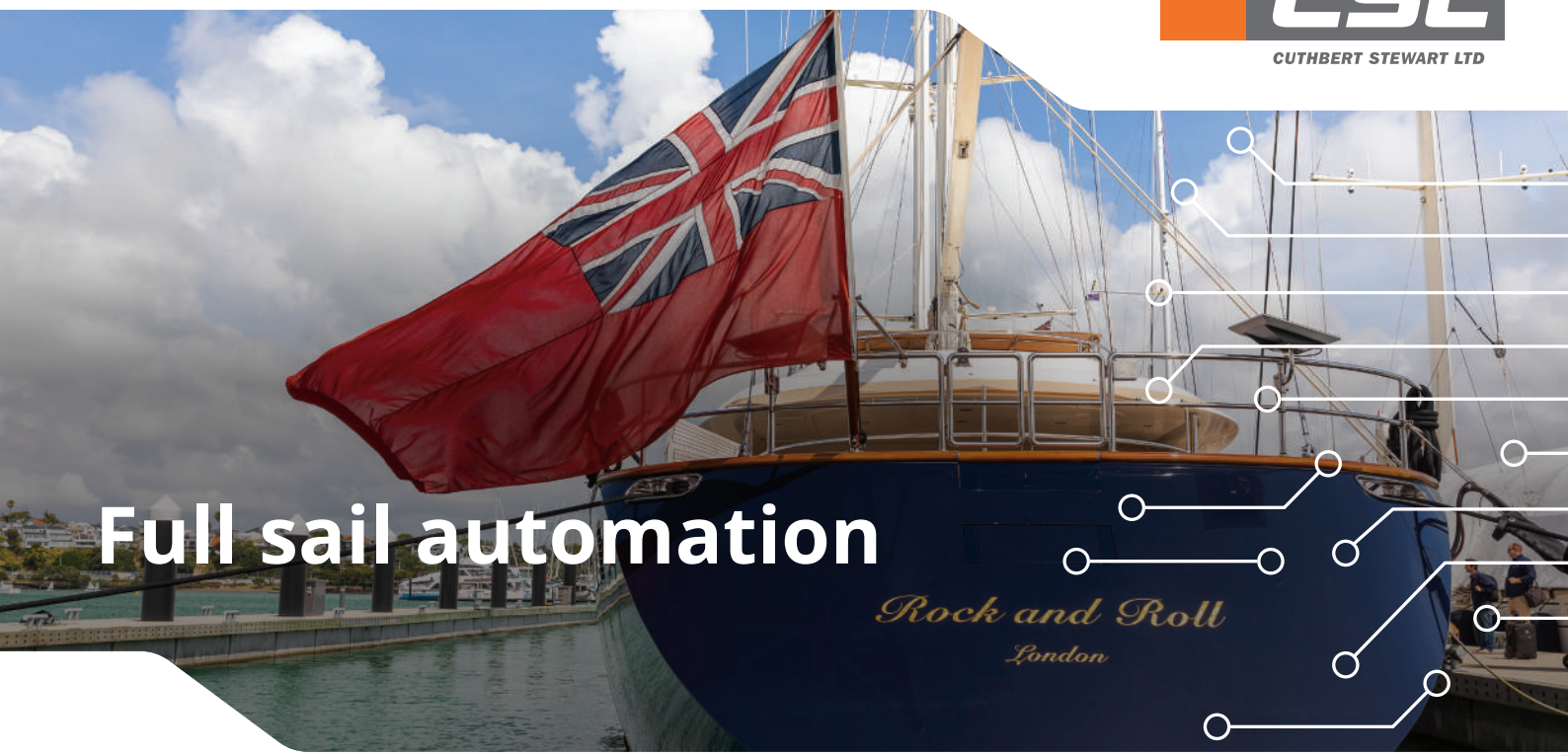


Full sail automation

Auckland harbour welcomed the luxury superyacht, 'Rock and Roll' as she sailed in for her bi-annual maintenance checks in December 2023.

Measuring 50 metres from bow to stern, Rock and Roll is a beautifully crafted vessel from Perini Navi – one of Italy's most famous shipyards. She was built in 1999 and is known for being around 2 knots faster than similar yachts in her class. Able to house 12 guests and 9 crew members, Rock and Roll has a single-voyage range of nearly 6000 kilometres.

Due to the lengthy intervals between maintenance for such long-range vessels it is vital that necessary repairs along with safety and compliance checks are performed with accuracy and expertise. When a yacht like Rock and Roll is taken out of the water, it presents a great opportunity for the introduction of technology upgrades, improvements and modern innovation – particularly if systems have deteriorated or become outdated.

After 25 years at sea, the methods of controlling the boat's five sails had been reduced to a largely manual process due to typical wear and tear.

One of New Zealand's leading marine electrical, automation and control system specialists, ATTEST was tasked with repairing the existing sail-management system.

ATTEST director, Chris Lynch-Blosse says they immediately recognised an opportunity to go beyond scheduled repairs and maintenance to deliver a new, fully automated state-of-the-art sail control system.

"Typically, the maintenance checks and repairs for a vessel like Rock and Roll must fit to a tight time frame. Our team, through its many years of expertise, recognised that the yacht, its crew and owner would receive enormous benefits from a new automated sail-control solution, but to deliver such a sophisticated project at the pace required would need us to bring in specialist support," he says.

Expert Collaboration

With such extensive experience with superyachts of all sizes and configurations, Lynch-Blosse and the ATTEST team needed to collaborate with a partner they could trust to hit the ground running, assist with the delivery of a fit-for-purpose design, provide quick access to the automation products required and support the installation and commissioning of such an ambitious project.

"Inviting Dalton Electrical to work with us on this project was a no-brainer. Along with their extremely high-level of automation capabilities and large project capacity, they also provided us with rapid access to Siemens automation products," says Lynch Blosse.

Delivering this state-of-the-art automation solution required world-leading technology along with the design, deployment, commissioning expertise and support to get the most out of them. As an Accredited Siemens Solution Partner and with a rich pedigree of adding tremendous value to large-scale projects, Dalton Electrical was the obvious company for ATTEST to work with.

Lynch-Blosse points out that this was no new collaboration and that he has been fortunate to work with Dalton Electrical in the past.

"As a leader in a niche part of the electrical industry, it's important for us to forge trusted relationships with a company like Dalton Electrical. We've worked with them long enough to trust that they'll say yes and be able to deliver before I've even picked up the phone. They also understand how important our sailing knowledge is with regards to making the final decisions on design and deployment," he says.

Global Reach

To work alongside ATTEST Senior Electrician, Ken Corkill, Dalton Electrical assembled a team for the project with automation manager, Thomas Fuscic taking the lead alongside Haydn Barnes, Chabb Chia and Daniel Preest.

This highly trained mix of automation, system design and project management expertise blended perfectly with ATTEST's unmatched marine knowledge and familiarity with the project.

The Dalton team used EPLAN engineering design software by Rittal to produce the new sail management system's design and establish a high-level cost estimate so that future decisions could be made confidently.

A major consideration early on was the integration of complex new technology with the yacht's existing sail-control panel, ensuring an easy transition for the skipper and crew whilst preserving the legacy of such a special vessel.

Thomas Fuscic says there was no guarantee of the encoder feedback and strain gauge systems being functional as they hadn't worked for so long, but with the depth in product availability from Siemens a dynamic hardware specification was chosen.

This approach allowed for flexibility so decisions could be easily made during the project without resulting in hardware changes and delays. All parties could proceed with assurance that the project could be delivered within the tight timeframe.

"The time constraints were constantly front of mind and our close relationship with Siemens globally was a critical factor in us being able to meet the project deadline while still accessing the products that would ensure we delivered a fit-for-purpose solution," says Fuscic.

"Once we had our initial design, we could easily engage Siemens directly to ensure availability and timely delivery of our equipment list beyond our local stock holding. In particular, we had 10 ET-200 IO cards pre-allocated to us before being manufactured at the Siemens plant in Nuremberg and shipped within 4 weeks – something that would have been impossible were it not for our status as a Siemens Solution Partner."

Best-In-Class

Just as important as product access, is product performance and quality. This is where Siemens excels and its clear why Dalton Electrical places such importance on establishing a close relationship with the global manufacturer.

"Siemens SIMATIC product range is designed to accommodate any automation undertaking with a tailorable, versatile and easily scalable platform. We were confident in the final system that resides in Rock and Roll's refurbished control room as we had undertaken such extensive testing in-house with a replicated set-up," says Haydn Barnes.

In fact, Dalton Electrical recreated the conditions on board Rock and Roll to simulate the solution, its equipment and all coding involved, providing total confidence in the effectiveness of the system after extensive testing and scenario reconstructions.

The variable speed drives (VSDs), central processing units (CPUs), programmable logic controller (PLC) and network modules were all proven to deliver the expected high performance and designed seamlessly into the limited space available. Taking pride of place is the human-machine interface (HMI) that delivers more insight and visibility into the technology and status of the vessel than ever before.

Barnes shows how valuable information such as system alarms and hardware diagnostics can be immediately available on screen, enhancing and complimenting the highly trained skills of the yacht's skipper and crew.

"On a vessel like Rock and Roll, the sails are often doing more things at a time than simply furling and unfurling. We have seven VSD's controlling the five sails and where the crew used to manage the sails manually, we've automated so many of the typical tasks and manoeuvres. The crew can control tacks, gybes, manage tensions and reefing from the joysticks on the original yacht control console," says Barnes.

The installation of the PLC and Drives was completed by Ken Corkill and the ATTEST team, followed by a general refurbishment of the cabinet given their familiarity with the tight confines of the available space and expertise with this type of deployment.

To prove the effectiveness and smooth operation of the system, three live sea trials were arranged. For the final one, the team from ATTEST and Dalton Electrical were accompanied by application engineers from Siemens. This provided an added layer of assurance and confidence for the owner and crew.

The Siemens remote access gateway ties the whole solution together so that the team from ATTEST or Dalton can remotely interrogate and troubleshoot the system at any time, from anywhere. This ensures that whatever circumstances arise, the crew and passengers of Rock and Roll are never at sea without support or assistance.

Above and Beyond

ATTEST is already an accomplished supplier of control & monitoring systems built by its in-house engineers and programmers.

Chris Lynch-Blosse says with so many projects running simultaneously, an urgent job like Rock and Roll requires an alternative, collaborative approach with a concurrent programme of discovery, design, procurement & installation to take place with each company playing to their strengths.

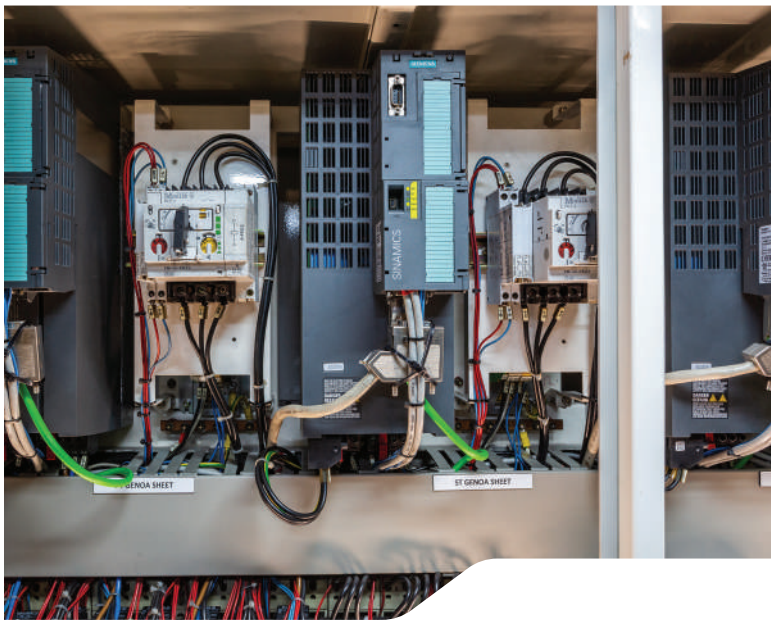
"This is a great example of capable people working excellently together on a complex solution within a tight timeframe. We called Dalton because of everything that they bring to table. These partnerships make it easy for smaller, more specialised companies like us to take on bigger projects.

"We saw the value of the Dalton and Siemens partnership working the other way where a small anomaly in the code was identified and sent back up the chain to Siemens head office to further-perfect what is already an amazing automation platform," he says.

Thomas Fuscic echoes these comments, saying that the exciting thing about these opportunities is getting the chance to work across such a rich variety of industries and projects. He says that every project delivers additional knowledge and experience to the whole Dalton team and the organisation considers continual professional development as a vital part of its DNA.

"At Dalton Electrical we aren't marine experts like ATTEST, we are engineering solutions experts. We don't always have the inherent industry knowledge of our partners but what we do contribute is proven engineering expertise and significant resources. We are set up to offer everything from troubleshooting to full automation design and commissioning, making it easy for our customers and partners to entrust what they choose from us and get on with growing their businesses," he says.

The most knowledgeable experts understand the true value of collaboration. Regardless of expertise, there are often instances where a task requires input and support from trusted partners that can help deliver superior outcomes – Dalton Electrical continues to show that you can call on them knowing you'll get an enthusiastic 'yes,' and will enjoy ongoing support for the lifetime of your projects.



Dalton Electrical's Rock and Roll Sail Automation project won the Innovation Award at iSPEC 2025

CSL SYSTEM INTEGRATOR PARTNER

FEATURED IN THIS PROJECT:

SIEMENS RITTAL CSL CUTHBERT STEWART LTD

DALTON ELECTRICAL