

Product Brief: Flow Cloud FlowMarine

Introduction

Flow Marine are this year launching our *Flow Cloud* service.

The service will collect engineering and navigational data from the vessel, relay it in real time to a secure cloud hub, and provide a set of dashboards and other tools to view and analyse the data both in real time and post-event.

Features

The service will enable yacht managers, on-board crew, support engineers, equipment manufacturers and shipyards to:

- View live displays of monitored data via gauges, mimics and other controls
- Create, view and annotate custom charts of correlated data
- Share data in various formats, including embedding charts in desktop applications and vessel management software
- Receive mobile device push notifications when unusual conditions occur
- Carry out complex analysis of vessel and equipment performance using artificial intelligence algorithms.
- View the same displays and features on board and in the cloud via any modern web browser.

- Remote and local vessel monitoring and data analysis
- Launching Q2 2018
- Allows greater operational efficiency and cost savings
- Use stand-alone or integrated with other tools
- Artificial Intelligence and Deep Learning applications

Applications

- Remote technical support via live dashboards
- Vessel security for intermittently-crewed vessels
- Post-event analysis — analyse what went wrong and how to fix it
- Warranty claims and support
- Condition-Based and Intelligent Maintenance
- Data gathering for efficiency improvements such as smart energy management, generator downsizing etc
- Intelligent route planning

Hardware and Installation

Our Cloud Service can receive data from any of the following:

- Navigational equipment supporting NMEA 0183 or 2000.
- Any PLC, or equipment controller that supports a standard industrial protocol such as Modbus, J1939, etc.
- Our own Alarm, Monitoring & Control System (AMCS)
- Other AMCSs which provide an outgoing data interface
- Other custom solutions

Data is collected using our low-cost gateways and pushed to the cloud via the ship's network or an optional built-in 4G modem.

Release Dates

We are currently alpha testing and expect the full service to launch in the second quarter of 2018.



Product Details

Internet Use and Bandwidth

The data is uploaded in real-time in an optimised binary format so uses minimal bandwidth — less than 5 kbps for a system monitoring 80 analogue and 220 switched channels at 1 sample per second. This is around 0.01% of the available upload bandwidth of a 4G connection and 0.05% of the download speed of a streaming movie.

For further control over the bandwidth, the administrator can select the logging interval for each channel and for analogue channels, the threshold at which changes are logged.

Intermittent Internet Connections

It is estimated that superyachts spend 20% of their time out of 4G range, and even satellite connections aren't 100% reliable.

When the internet connection is lost, data continues to be logged locally and the backlog is pushed back to the cloud once the connection is restored.

Security

The *Flow Cloud* system is designed to be read-only, so even authorised users will not be able to control the vessel from the cloud.

Data is pushed by the vessel gateway(s) to a single whitelisted cloud server (never pulled), The vessel gateway

does not listen on its uplink to cloud.

All network communication, both internally to the vessel and across the uplink uses Transport Layer Security (TLS). This prevents impersonation snooping or interception on communications between users, cloud and vessel server.

All users on or off the vessel are authenticated via user accounts - and all their actions are logged.

We will engage a specialised security company to audit and penetration-test our system before commercial launch and at regular intervals thereafter.

Pricing

Cloud Service

Pricing will be on a sliding scale dependent on number of channels and amount of data storage required starting at around £300 per year.

Hardware

Our cloud gateways will cost around £300 each. For simple applications only one gateway will be needed on each vessel.

Pilot Scheme

We have already started alpha testing and will shortly be starting a pilot scheme with selected customers, to incorporate user feedback and refine the product. Please contact us if you would like to be involved.

About Flow Marine

The Company

Flow Marine Limited (UK Reg No 09624841) is a software and electrical engineering consultancy uniquely positioned to develop software telemetry, engineering and management tools for the Superyacht industry.

We use established engineering processes coupled with the latest Web and IoT (Internet of Things) technologies to build secure, resilient and usable systems.

The company was founded by Dave Sirockin and Rebecca Vaughan in 2015 after initial product research and development carried out by Dave for his engineering company, Superior Yacht Systems Limited.

Directors

Dave Sirockin, Company Director & Founder

Dave is a graduate Electrical and Electronic engineer (B Eng Elec Eng) and software developer who has spent over 25 years leading projects based around real-time engineering systems in industries as diverse as electricity supply, Formula 1 Racing, and for the last 15 years, superyachts.

Dave developed the concept and prototype for Flow as a result of his experience running Superior Yacht Systems Ltd, which has built up a wide and loyal client base over the last 15 years.

Email: dave@flow-marine.com

Phone: +33 758 62 75 63

Nicolas Pelletier, Technical Director

Nicolas has been working as a multimedia and graphic designer since 2004. His broadcast design work has been on national television, and he has worked for such clients as BNP Paribas, Vinci, Dassault, Google, Virgin Media, Roland-Garros, Lacoste, Renault, etc. His passion for new technologies has led him to turn to modern web application development and user experience. He joined Superior Yacht Systems in 2014 and Flow Marine on its foundation in 2015.

Email: nicolas@flow-marine.com

Phone: +34 666 66 21 17

Rebecca Vaughan, Operations Director

Rebecca is a graduate with management experience in the private, public and non-profit sector including the NHS, local government, the hospitality industry, the Environment agency, and housing services. She has run her own business as well as worked with start-ups to put in place office systems, quality assurance, HR and marketing.

Email: becky@flow-marine.com

Phone: +44 7774 597619