

Time To Catch Up

Yachting is behind the times in media and telecoms

The above bold statements summarise the contentions of **Duncan Soffe**. His somewhat controversial view of media and telecoms for superyachts is detailed here and is driven by his role as founder of Eolute Ltd, a new large-yacht consultancy – a practice, he tells us, that has 60 years of combined experience (as one might expect) with associated naval architects, a designer, AV and also – and perhaps less commonly – in the military and telecoms specialist fields. This neatly fits our project engineering focus, albeit that of electronic and IT systems architecture. Less obviously it also addresses such project engineering at a theoretical or best-practice level where he suggests (in addition to technical terms) criteria for specification and even suggests a series of questions that a suitable vendor should be able to answer.



Photo: Corbis

Over the past few years the yacht industry has enjoyed dramatic growth in terms of the number of new builds, project sizes and complexity. It is not uncommon for yachts in excess of 100 m to be commissioned, which creates a whole new dynamic in terms of systems performance, legislative and regulatory requirements. This is further exacerbated by the

demands placed on the communication and media systems by the clients and crew.

Reduced cost and 'always on' technology allows yacht-wide access to many of the advanced communication and content (media) distribution technologies that once were the domain of the shore-based market.

Today a single cable typically can provide the following services, known as 'convergence':

1. High-speed internet access
2. Email
3. IP telephony
4. Video conferencing
5. Media streaming: video, music, financial market information and touch screen control (AMX, Crestron)
6. Environmental control – lighting and air conditioning
7. Security services: CCTV, DEAC (Door Entry Access)
8. Yacht monitoring systems
9. Yacht's IT network.

Convergence is a relatively new development within the yacht market but has been a de-facto standard within the enterprise telecommunications sector for many years. Traditionally up to nine cables of varying types would supply a cabin; with convergence this is one, significantly reducing the amount of structured cabling required on board.

It is no great surprise that with all the benefits of the latest systems and technology comes a significantly increased risk of misuse and malicious attack – examples appear in the media daily. The heavier reliance on broadband public internet access by systems, guests and crew means that the effect on a converged yacht system could be catastrophic. In the past this has not been as

great an issue; the yacht could be considered a closed system not being connected directly to the internet full time.

Reducing the level of risk is achieved in the broader telecommunications field by hardening systems, restricting permitted use and selecting best of breed technology rather than aligning to a single vendor. By adopting a system-integrated approach with strict adherence to standards and regulation overseen by a consultancy-led project governance structure, high levels of security against attack can also be achieved in the yachting industry.

As a result of the phenomenal growth of the public internet, the information security and legal industries have been inadvertently slammed together in a way neither sector could have envisaged. Information is an asset that needs to be suitably protected; think identity theft, credit-card fraud, cruising log information, guest lists, to name but a few. This is especially important in the increasingly interconnected world where information is now exposed to a growing number and a wider variety of threats.

There are many international laws and regulations governing electronic communications. The regulatory framework for electronic communications cover:

- Security related provisions regarding privacy
- Unacceptable use policies
- Content abuse
- Provisions against spam
- Spyware

Information security is achieved by implementing a suitable set of controls, including: policies, processes, procedures, 'governance structure' and software/hardware functions. These controls need to be established, implemented, monitored, reviewed and improved, where necessary, to ensure that the specific security objectives are achieved and maintained. Recently a letter from a captain expressed concern regarding the remote access of his telephone system via the VSAT. A problem had occurred on the phone system, which the service provider resolved remotely. However, it also raised questions regarding the security of other systems and data on board. What measures are in place to ensure the security of the other systems that operate on the same network and what standards, agreements and procedures are in place to minimise any inadvertent access?

Perhaps a more poignant question that has been asked is, 'How secure is my email; does my provider have access to my mail?' More often than not the answer to the latter is 'yes' and it has been reported that some

providers read their client's email. (Duncan here refers to e-mail hosts who may be ISPs, but not generally a satcom provider, Ed.)

So what measures can be taken to protect these systems and data? IT networks are the backbone of many integrated yacht systems, but some are insufficiently designed and implemented. Carrying IP traffic over satellites poses the same degree of security risks as sending it over a terrestrial connection. Individuals face the same challenges as enterprises from viruses to SPAM and phishing to denial of service attacks. All these examples have one goal in mind: to cause disruption, gain access to systems and inevitably to gain access to information.

Flawed specifications can result in unsecured rogue wireless access points being installed, which opens the yacht's network to the outside world. When in range anyone with a little knowledge may log on and use the yacht's internet connection and, in some cases, browse the files on board. This may then disrupt the other services that share the same network, even if it is segmented with virtual local area networks (VLAN). If someone were to access the yacht's network or someone on board were to use their internet connection to download an unlicensed film, the yacht may be liable for a fine of \$350,000 or, if it was demonstrated that



Audio Visual and Communications



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Today's superyacht encompasses so many complex electronic systems, including audio visual, IT networks and communications, that there is now a very real need for experts to advise on the best solution for each project.

In many instances these systems are all linked in some way and therefore it is extremely beneficial to have a consultant on board at the conceptual stage, whether upgrading an existing environment or creating a new one.

The benefits of taking into account the effects of these systems at an early stage will save an enormous amount of time and money throughout the build/refit process. These systems have a dramatic effect on not only the enjoyment of the yacht but also other factors including:

- Cable routing
- Load balance
- Air conditioning
- Interior design for example:
 - The size and position of cabinets
 - Speaker positions and furniture layout
 - Exterior design including location of antennas

evolute also offers:

- Specification writing based on the requirements of the Owner
- Appraisal of quotations and selection of contractor
- Assistance with contractual negotiations
- Oversight of installation and mediation
- Commissioning and testing of systems



What We Do



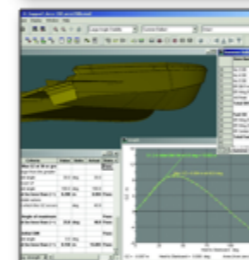
Why do people work with us?

Our clients come to us when they need a particular yacht project delivered quickly and effectively, or when they have a critical problem that needs immediate attention.

They come to us because we are friendly, open and honest. We don't promise things we cannot deliver.

evolute provides the following services:-

- ◆ Audio visual and communications consultancy
- ◆ Naval architecture
- ◆ New build project management
- ◆ Refit project management
- ◆ Contract negotiations
- ◆ Emergency response services
- ◆ Expert Witness representation



pornography had been downloaded, the ramifications could be disastrous, not to mention the media coverage which could ensue. These are just a few areas for consideration when designing the system specification.



Surely it is high time to draw upon the services of experts that have been supplying these types of systems to large enterprises for many years. A couple of good examples would be:

The current hype about VoIP (Voice over Internet Protocol) in the yachting market is being treated

The issues that we face today are slightly different from several years ago; how many current providers to the yacht industry can really handle the complete audiovisual, security, telecoms and IT network installation? How often is the company selected to provide the systems, inspect them and had due diligence carried out to ensure that they are financially strong enough to fulfil the contract? With the magnitude of the contracts being awarded, in many cases, a single project will utilise all of the capacity for one company both in terms of engineering resource and cash flow. When problems occur there is little or no contingency, so quality and system security suffer because so often they lack the experience and training required.

as a new technology. In the enterprise telecoms market this is actually old news, it has been around for many years; you only have to see some films that are ten years old to see a CISCO IP handset in the background. The real advantage of this technology for the yacht market is the possibility of cheap phone calls similar to Skype but with a guaranteed level of service or call quality (IP trunking). There are no great advantages of having a VoIP system for use just around the yacht. There are companies which have been rolling out these systems with over 5,000 handsets linked to offices all over the world. They have a wealth of experience and knowledge that we could draw upon and resources to cope with any size of installation on board a yacht.

The introduction of the Seatel 4003 VSAT gave a widely available, affordable broadband connection for yachts, which also had an antenna small enough not to upset the aesthetics. Although this stabilised platform was a breakthrough in the marine market, fixed VSAT terminals have been used in remote areas and in mobile military applications for many years and once again the yacht industry can draw upon these experiences to capitalise on the benefits more fully and efficiently.

So what measures can we put in place to maximise the potential of these systems and minimise the risks? There are many projects, including new yacht construction, refits and upgrades demand integrated systems. The system will inevitably be incredibly complex although there are common prerequisites; the system should be reliable, easy to use and secure, so what advice could be given at the outset and what standards/codes of practice should be expected as a minimum?

We suggest the following questions should be asked when selecting a service partner:

- What industry best practices does the service partner adhere to? Are they able to demonstrate them?
- From where do they draw their experience?
- How will they protect your information from unlawful interrogation?
- How will your hardware/software be maintained and be kept up to date?
- What is the reputation of the provider within the industry?
- What measures will be taken to secure the Infrastructure?
- What proactive security testing services will they undertake and how frequently?

In the past the entertainment and communications systems on a large-scale yacht project would be lucky to have four pages of a building specification dedicated to them and the PC (provisional cost) sum allowance for the entertainment and communication system would more often than not be inadequate. This building specification formed the basis for a 'request for quotation' that would be sent to the entertainment and communications providers. As a result the quotations would vary enormously in terms of quality, price and functionality. Invariably the final decision to

award the contract would be based solely on price, when professionalism, creativity, innovation and industry knowledge could prevent a potentially false economy and client dissatisfaction with the final result.

Ideally a performance specification should be written in consultation with the client and take into account the:

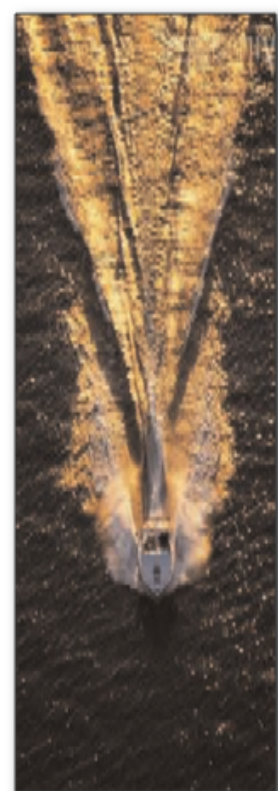
- Functional requirements of the client;
- Functionality of the system;
- Features of the system;
- Standards to be adhered to;
- Quality of the equipment to be used;
- Industry best practice.

This, coupled with a matrix relevant to the project, would form a request for quotation enabling the potential suppliers to design a system whilst providing a tight framework of strict guidelines, cost, standards and user experience.

The performance specification differs from those generally seen in a yacht build specification. Build specifications tend to list items of equipment and do not set goals and standards. Itemising a list of equipment may create its own set of problems, including:

- By the time of installation the itemised equipment will probably be out of date;
- It limits other potential vendors from quoting as they may not specifically sell that brand of equipment and they are given no or little alternatives;
- It may not perform all of the functions required or cover all the areas of the yacht;
- The functionality of the system is not defined.

Advancements in technology will continue, entertainment and communications systems will become more complex and the requirements for functionality and security will be ever greater. Currently the yacht industry is behind the advancements of the enterprise telecommunications and entertainment sectors. By working with an experienced consultancy practice to understand the needs of the client and then draw upon 'best of breed' professionals to supply and install different aspects of the system, the latest developments may be incorporated. Duncan Soffe
Evolute Ltd



Contact Us

Get in touch

We're always happy to hear from people who are interested in working with us. If you have a specific project in mind, or you think you may need us in the future you can:

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