



# INMARSAT

A Superyacht Connectivity Report

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2019

Inmarsat  
Research  
Programme  
2019



Confidential

**“The geographical coverage provided by Fleet Xpress is excellent, and the flexibility of the service is another very important aspect which contributes to its overall attractiveness”**

*Superyacht captain*



## **Inmarsat**

**Since 1979, Inmarsat has been providing reliable voice and high-speed data communications to governments, enterprises and other organisations, with a broad range of services that can be used on land, at sea or in the air.**

Inmarsat operates around the world, with a presence in the major ports and centres of commerce on every continent.

Launched in 2016, Inmarsat's Fleet Xpress Service is now the world's fastest growing maritime VSAT service and offers a powerful and unique combination of high-performance, reliable guaranteed global coverage and freedom of subscription flexibility that together sets a new standard for communication for superyachts.

Inmarsat's Fleet Xpress VSAT service for superyachts provides added flexibility to meet seasonal demand changes – high bandwidth during peak demand and minimal service offseason. What's more, the Ka-band service works with smaller terminals than traditional Ku-Band, reducing the weight on board by up to 200kg!

In addition, the newly integrated Fleet Secure service provides both network and endpoint security alongside cyber threat detection.

# The Superyacht Group

**For more than two decades we have dedicated our global media channels to educating, informing and advising all sectors of the superyacht market. Our team of industry experts consistently delivers on our mantra, ‘building a better superyacht market’.**

From expert journalism to real-time news coverage; from face-to-face networking to luxury communication tools; from global conference platforms to exclusive private communities, no other media group provides such a concentrated and focused mix of superyacht marketing and information channels.

The Superyacht Agency is here to meet the need for superior data-driven decisions in the superyacht market, while the Superyacht Events division organises, hosts and delivers some of the most powerful and respected conferences, meetings and networking opportunities in the industry.

Through a tailored service and long-standing relationships with industry business leaders, The Superyacht Group understands what the superyacht market needs, and has the tools to deliver it.

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**Connectivity  
Insight**

# Salient insight for industry professionals involved in the management and use of satcomms

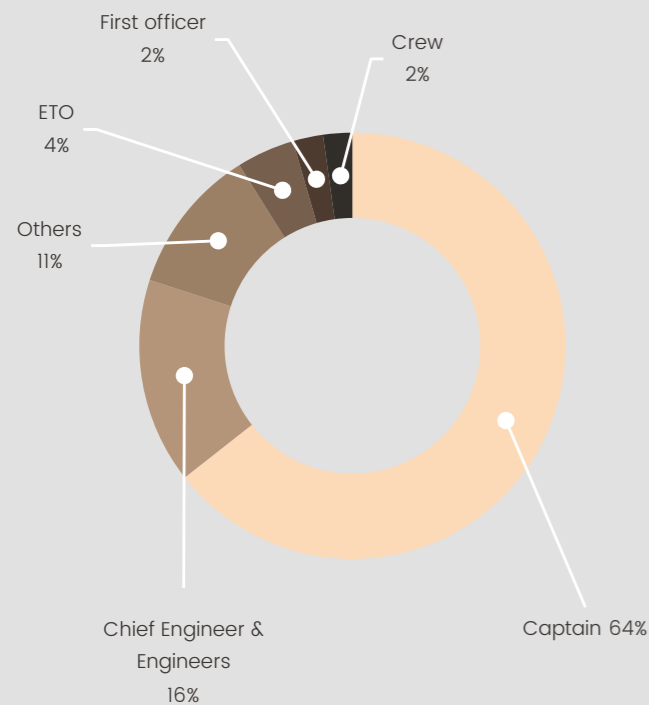
*Building on 2018's A Superyacht Connectivity Report, which focused on the procurement and installation of satcomms technology in light of the development of Inmarsat's turnkey hardware, airtime and on-going service package, the 2019 report examines the use of satcomms on board superyachts and reveals the future requirements of the superyacht market for global connectivity solutions.*

Primarily, it is those individuals that work on board the superyachts, or have previously worked on board, that have a nuanced understanding of satcomms usage and cost. Therefore, The Superyacht Agency surveyed captains (64.4 per cent), chief engineers & engineers (15.6 per cent), ETOs (4.4 per cent), first officers (2.3 per cent), crew (2.2 per cent) and various other stakeholders (11.1 per cent). Respondents work across a range of vessel sizes from smaller superyachts (9.6 per cent) to 100m+ (5.5 per cent).

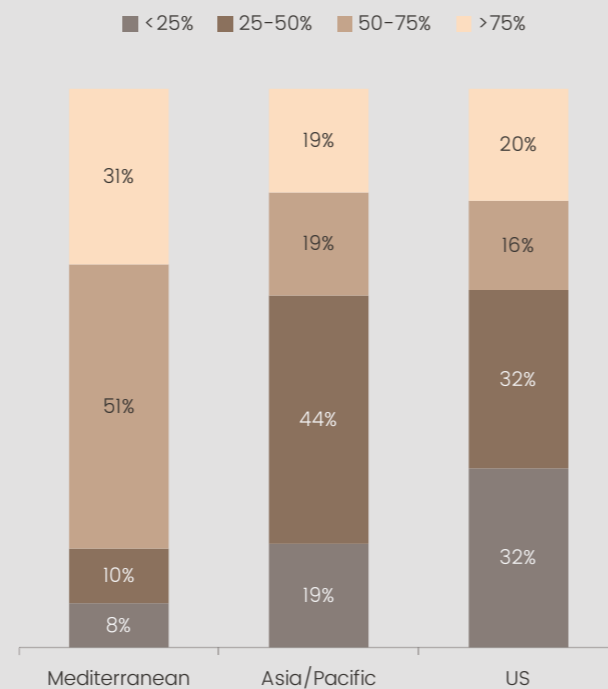
Although most vessels will spend at least some time in the Mediterranean, only 31.4 per cent will remain for more than 75 per cent of the year, leaving 68.6 per cent of those surveyed with a clear intention to travel further afield. Mobility is even higher in the Asia/Pacific and US regions, with 81.5 and 80 per cent respectively expecting to cruise elsewhere in the course of a year.

With strong anecdotal evidence suggesting that more superyacht owners are exploring worldwide with family and friends in search of new experiences and adventures, the desire for freedom to sail anywhere and everywhere will be a significant factor in the demand for continuous onboard connectivity in the years ahead.

**Demographic of survey respondents**



**Percentage time spent in popular cruising areas**

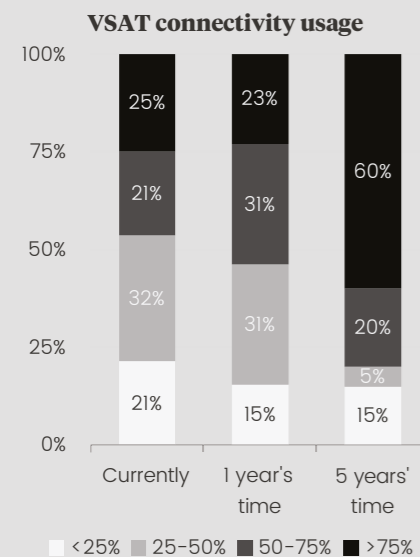


# Communication method and usage

## VSAT usage to surge

In line with the growing prevalence of digitalisation in the superyacht sector, the 2019 report findings provide staggering evidence that VSAT connectivity usage will surge over the next five years. The superyacht professionals surveyed predicted that there will be an increasing dependence on satellite connectivity and that it will be granted greater priority in terms of maintaining a safe, efficient and content vessel, with the findings indicating a corresponding willingness to increase spending on satcomms in the future.

Both the 2018 and 2019 reports confirm that 3G/4G is still the most popular on-board communication system. In 2018, 41 per cent of respondents claimed to have such a system on board their superyacht, while similar results were found in the 2019 study, which found that 4G ranked highest with 35.2 per cent. However, satellite communications usage is growing. When asked about VSAT usage in five years' time, a huge majority of 80 per cent of respondents believe they will use VSAT for more than 50 per cent of the time, with 60 per cent predicting to use VSAT for more than 75 per cent of the time.



## Usage time to grow

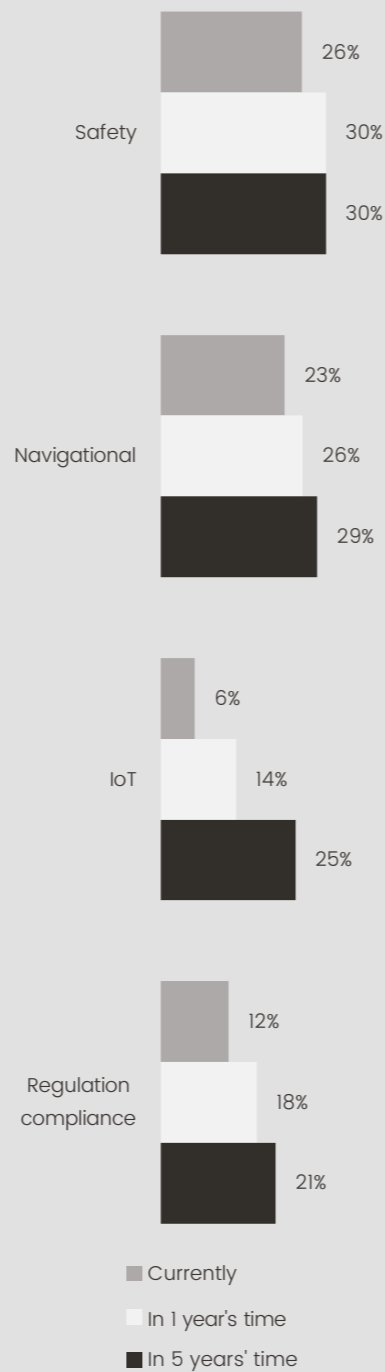
We asked respondents to estimate the extent that they currently use VSAT technology. Currently, the use of VSAT for <25 per cent, 25-50 per cent, 50-75 per cent and >75 per cent of the time on board is split relatively evenly at 21.4 per cent, 32.2 per cent, 21.4 per cent and 25 per cent respectively. Therefore, 46.4 per cent of respondents believe that they are using VSAT for over 50 per cent of the time the vessel is used. When asked to estimate how much they are likely to use VSAT in a year's time, the number who believe they will require VSAT for over 50 per cent of the time rose to 53.8 per cent, while, as mentioned above, predicted usage rises further in next five years.

## IoT usage to rapidly grow

In terms of the individual operational and leisure factors driving VSAT growth, perhaps the most telling statistic in the 2019 report is the large increase in the average operational connectivity demand for IoT (Sensors and Applications) devices. Respondents predict IoT will account for 24.7 per cent of operational connectivity demand within five years, increasing from 6.2 per cent currently.

This represents the largest operational growth as superyachts become digitalised and connected. In addition, responses suggest a 9% growth in usage for regulatory compliance and about a 6% growth in safety and navigational connectivity demand over the next five years.

## Average operational connectivity demand



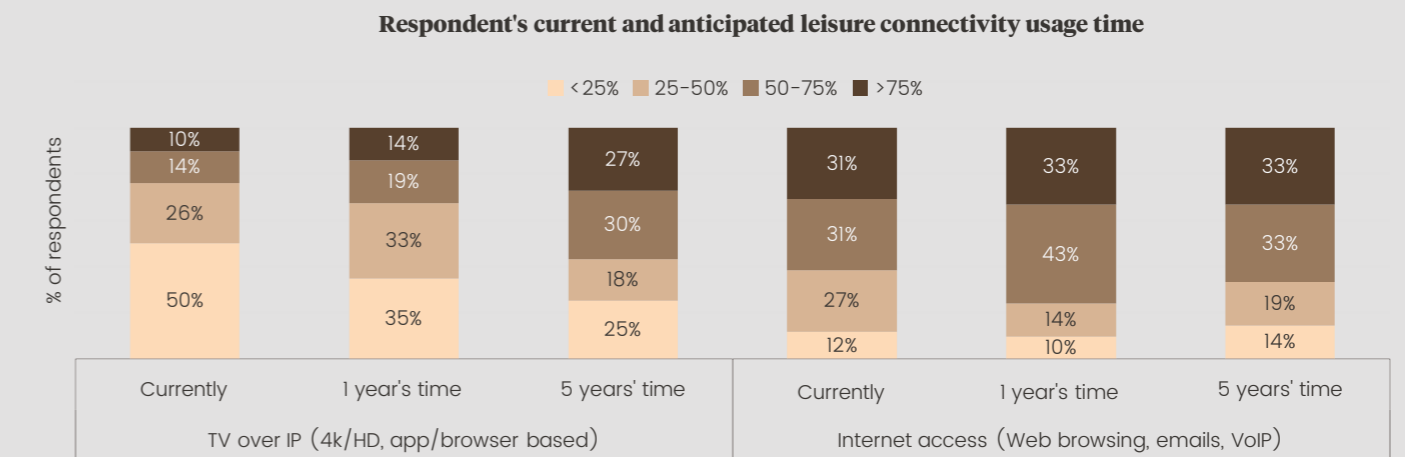
## TV over IP demand

As well as the operational use of satcomms, it is imperative that any future satcomms package pay close attention to leisure connectivity trends. It is the area of TV over IP streaming that produced the most revealing responses in this section, with a huge jump in usage expected in five years' time, representing the largest growth in leisure/entertainment use. While the 2018 report highlighted that TVIP and content streaming demands were considered somewhat secondary to various operational uses, further investigation has shown, as with the operational demand study, that respondents are fully aware that crew, owners and guests are becoming increasingly reliant on satcomms for their enjoyment, as well as their safety.

At present, 50 per cent of respondents believe that TV over IP services (4k/HD/browser based) account for less than 25 per cent of the leisure connectivity demand, with 26 per cent selecting 25-50 per cent, 14 per cent selecting 50-75 per cent and only 10 per cent believing that TV over IP services account for more than 75 per cent of the leisure demand.

However, in just a year's time, respondents believe these proportions will have dramatically changed, with 65.2 per cent of respondents believing these services will account for more than 25 per cent of the leisure demand, versus 50 per cent in the present day. Flash forward five years and the respondents believe the change to be even more dramatic, with 75 per cent believing it will account for 25 per cent or more of leisure demand, with a staggering 27.3 per cent believing these services will account for 75 per cent or more.

Respondents believe that the percentage demands of Internet access services (web browsing, emails, VoIP) will increase less rapidly in the next five years. What this perhaps suggests is that respondents are incredibly confident that high-definition streaming applications will play an increasingly large role on board superyachts, whereas, by comparison, the less consumptive web-based activities, such as browsing social media platforms and doing emails, will remain relatively stable as an on-board resource. In five years' time, 67 per cent of respondents believe they will use connectivity for internet access 50 per cent of the time, compared to 62 per cent of respondents currently.



## Safety driving demand

One of the major findings from the 2018 report highlighted that, for the most part, satcomms was most desired for operational uses, with a high percentage of respondents claiming that the key uses of satcomms included ISM & yacht management (43 per cent), IOT (34 per cent) and the optimisation of navigational operations (27 per cent). A lower percentage than expected (23 per cent) believed that TVIP/Content streaming was one of the key uses.

In order to further explore the operational use of satcomms, the 2019 report focused on operational uses and considered how these uses are likely to change in the coming years. On average, respondents believed that on board systems relating to safety required the greatest proportion (25.9 per cent) of the connectivity demand, followed soon thereafter by navigational equipment (22.7 per cent).

A far greater proportion of connectivity in this year's report was perceived to be required by IoT (6.2 per cent) and regulatory compliance (12.4 per cent). What is perhaps telling is that respondents believe that every single one of the aforementioned options would require a greater percentage share of the overall connectivity demand in years to come. While their predictions may not necessarily be an accurate representation of the direction that specific technologies are moving in, it does, however, clearly highlight that the respondents are incredibly aware that themselves and the vessels that they operate are becoming increasingly reliant on satcomms across the board.

# Cyber security

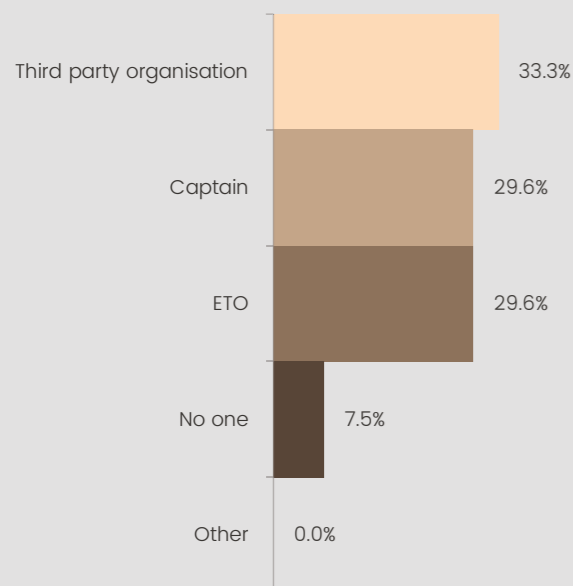
## Increasing digitalisation, but cyber risks remain

Cyber security has been a hot topic in the superyacht industry for some time now with more cyber-attacks threatening vessel systems, the integrity of personal data and the onboard IT infrastructure. Results from the 2018 report highlighted a lack of awareness from respondents to cyber threats. While this is by no means surprising, considering most are not cyber security experts, it still poses a risk to the vessels. It is clear that many superyacht professionals believe that a standard anti-virus program will cover all their cyber security requirements. The truth is that a powerful, multi-layered endpoint solution, such as Inmarsat's Fleet Secure Portfolio, is essential to remove infections and threats, giving users more control over their environment. Only a defence

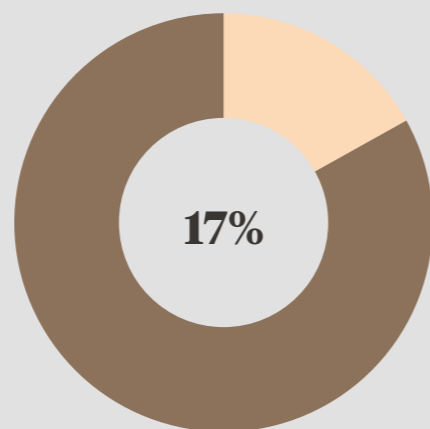
strategy combining multiple asset management, monitoring options, network security, awareness and training, and endpoint security can actively seek to maintain a secure system core. Indeed, the graph highlights that only 16.9 per cent of respondents recognise the difference between anti-virus security and network endpoint security. When asked in 2018 how cyber security provision was managed on board the superyachts, the overwhelming majority (63 per cent) of respondents admitted that simple firewalls and on-board management practices were used. In order to ascertain quite why this was the case, the 2019 report asked who was in charge of on-board cyber security. Thankfully, 33.3 per cent of respondents said that a third-party

organisation is in charge of their security management. However, 29.6 per cent said that the captain was in charge, with a further 29.6 per cent saying that the ETO was in charge. Given the knowledge gap that is clearly highlighted in the previous question, having captains and ETOs in charge may not, necessarily, be the most sensible options. Even more concerning, 7.5 per cent of respondents admitted that nobody is in charge of cyber security management on board.

### Cyber security management



### Proportion of respondents who know the difference between anti-virus and network endpoint security



# Associated costs

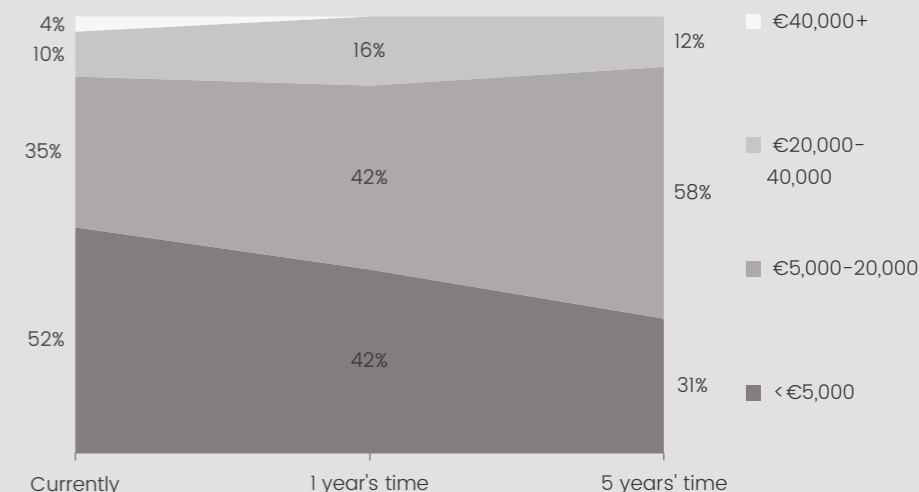
## Spend to increase

The survey results suggest that the respondents expect to allocate more of their budget to investing in global connectivity solutions in the future.

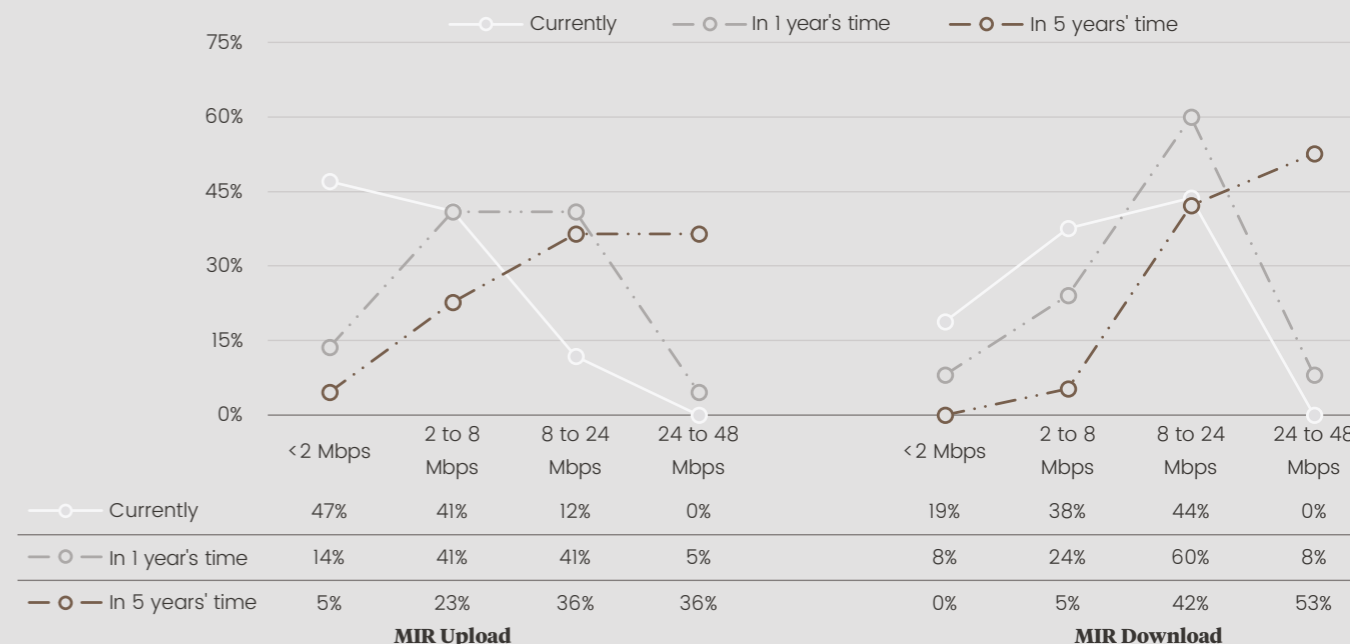
At present, over half (51.7 per cent) of respondents fall in the lowest price boundary (<€5,000) for monthly expenditure on satcomms, which may go some distance in explaining why such a high percentage also fall within the lowest speed categories. This percentage decreases to 42.7 per cent in one year's time and then 30.8 per cent in five years' time.

Another 34.5 per cent fall within the €5,000-€20,000 bracket, but this is anticipated to increase substantially to 57.7 per cent in five years' time. Only 13.7 per cent spend more than €20,000 per month on satcomms. Within the next 12 months, 15.8 per cent expect to be paying between €20,000-€40,000 per month.

### Current satcomm cost and expectations



### MIR speed currently and expectation



# Satcomms speed

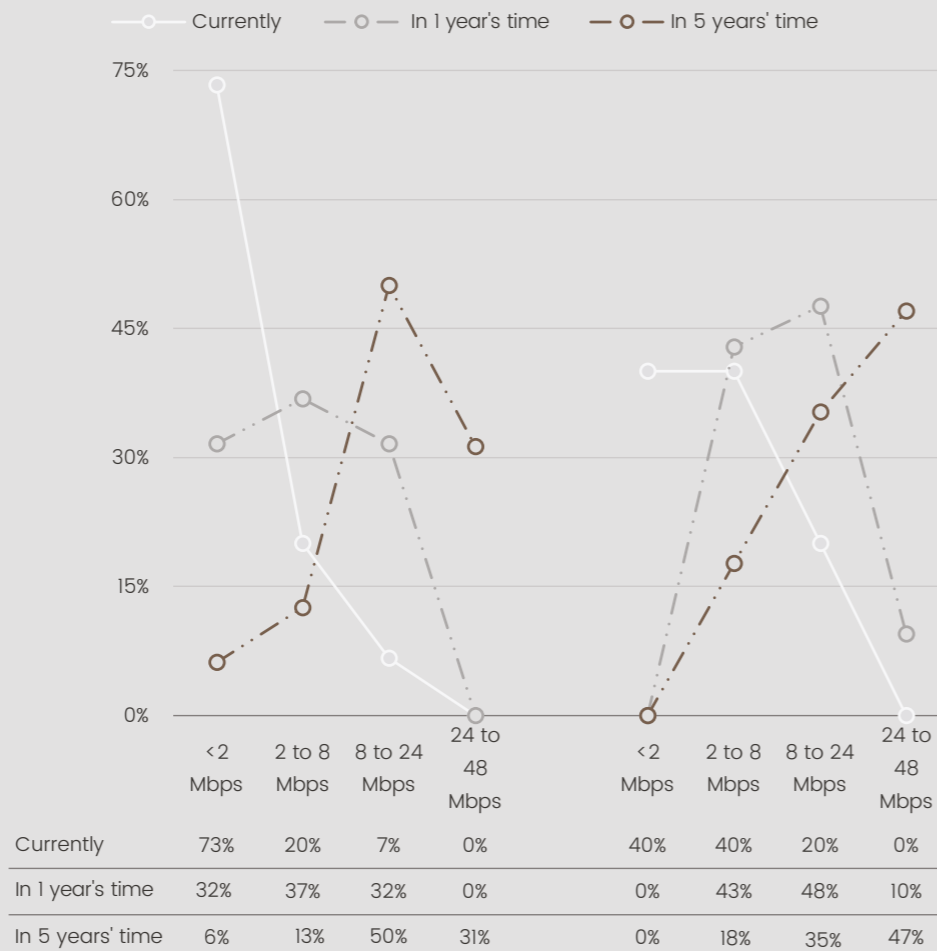
## Need for speed

The report has aptly highlighted that there is an expectation that the demand for both operational and leisure connectivity is expected to increase within the next five years. One would expect this assumption to go hand in hand with a perceivable increase in both upload and download speed across MIR and CIR systems – and so it has proved.

According to the survey responses, an overwhelming majority (88.3 per cent) of respondents feel that their current MIR upload speeds fall within the two slowest categories, namely less than two Mbps (47.1 per cent) and two to eight Mbps (41.2 per cent). The remaining 11.8 per cent believe their speed to be between 8 and 24 Mbps, with no respondents believing that their MIR speed exists within the 24-48 Mbps range.

However, even within the next year respondents seem confident that their upload speeds will increase: nearly half (45.4 per cent) believe that their MIR upload speed will be above eight Mbps, with 4.6 per cent of these individuals believing their MIR upload speed will be in the 24-48 Mbps category. In five years, 36.4 per cent of the respondents believe that their MIR upload speed will fall within the 24-48 Mbps category, representing a dramatic increase from the zero per cent of respondents that currently fall within it, and a further 36.4 per cent expect it to fall within the 8 to 24 Mbps bracket. The same can be said of the MIR download speeds, however it must also be noted that respondents seem far more positive about their current download speeds, with only 18.8 per cent believing that they fall within the sub-two Mbps category. Indeed, the majority (43.8 per cent) of respondents believe they currently fall within the eight to 24 Mbps category. Respondents are optimistic that this will further improve in the medium term, with eight per cent believing that their vessel will have a download speed exceeding 24 Mbps in a year's time, rising to 52.6 per cent in five years' time.

**CIR speed currently and expectation**



**CIR Upload**

Regarding CIR speed, the results are extremely similar with 73.3 per cent of respondents believing that their CIR upload speed currently falls within the sub-two Mbps and zero falling within the 24-28 category. With regards to download speed, 80 per cent believe they fall within the two slowest categories. Within the next 12 months, less than half of the respondents who have sub-two Mbps upload speed believe they will be within this slowest category, although zero believe they will reach the 24-48 category.

**CIR Download**

By contrast, 9.5 per cent feel that, by next year, they will have 24-48 Mbps CIR download speed. As with the MIR results, respondents believe that the CIR landscape will be significantly better in five years' time. When it comes to upload speeds, 81.3 per cent of respondents expect to be in the two fastest upload categories, with 82.4 per cent of respondents believing the same of the download speeds.







# Appendices



# Questions submitted to the market

*I am a...*

*The vessel(s) I currently operate/work on is/are...*

*What type(s) of vessel(s) do you currently work on?*

*What percentage of time annually do you spend in each of these regions?*

*What communication technology do you currently have on-board?*

*If known, please state your current upload and download speed (in Mbps)*

*What would be your desired upload and download speed in the next 12 months and in 5 years' time?*

*What percentage of time do you currently use VSAT connectivity, and how much do you expect it to be in 1 and 5 years' time?*

*Please estimate, in Euros, how much is spent per month on satcomms, and how much do you expect to be spending in 1 and 5 years' time*

*Please estimate your current operational connectivity demand (in %) and in 1 and 5 years' time*

*Please estimate your current guest and crew connectivity demand (in %) and in 1 and 5 years' time*

*Do you restrict crew internet access?*

*Do you have any of the following cyber security measures in place?*

*Do you know the difference between anti-virus software and network endpoint security?*

*Who currently manages your cyber security?*

*Please rank the following factors by threat level to cyber security.*

*Do you use on-board sensors to collect data?*

*What do you use the collected data on-board for?*

*Are you using applications to analyse that data?*

*Do you send collected data ashore?*

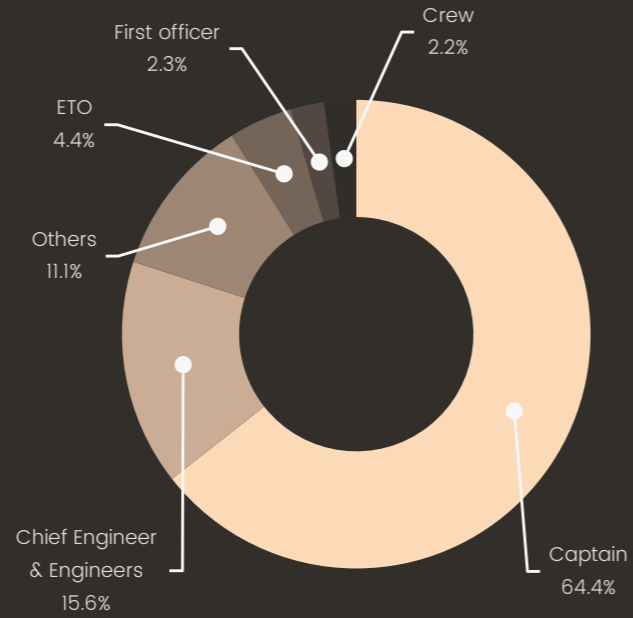
*How do you use VSAT for safety and regulation?*

*Are you aware of the following safety services integrated into your communications?*

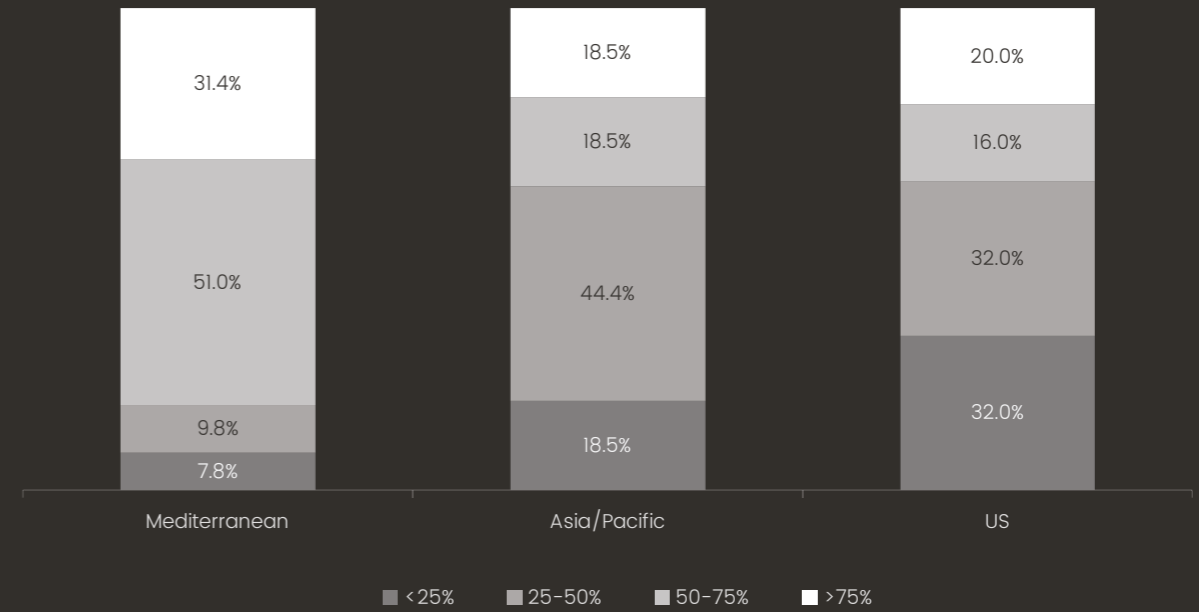
# Insight from questions

## Survey demographic

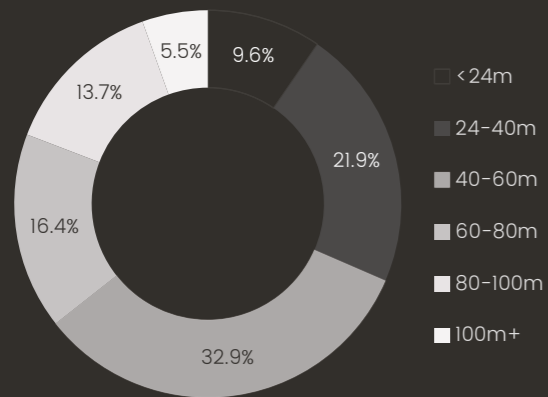
Survey demographic breakdown	
Role	Percentage
Captain	64.4%
Chief Engineers & Engineers	15.6%
Others	11.1%
ETO	4.4%
First Officers	2.3%
Crew	2.2%
	100%



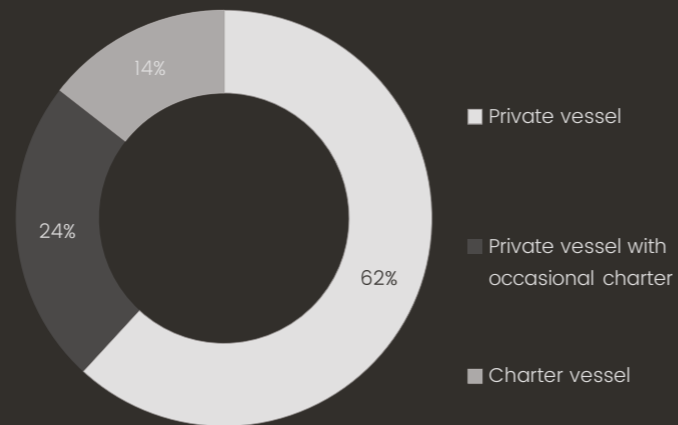
## Time spent in selected areas



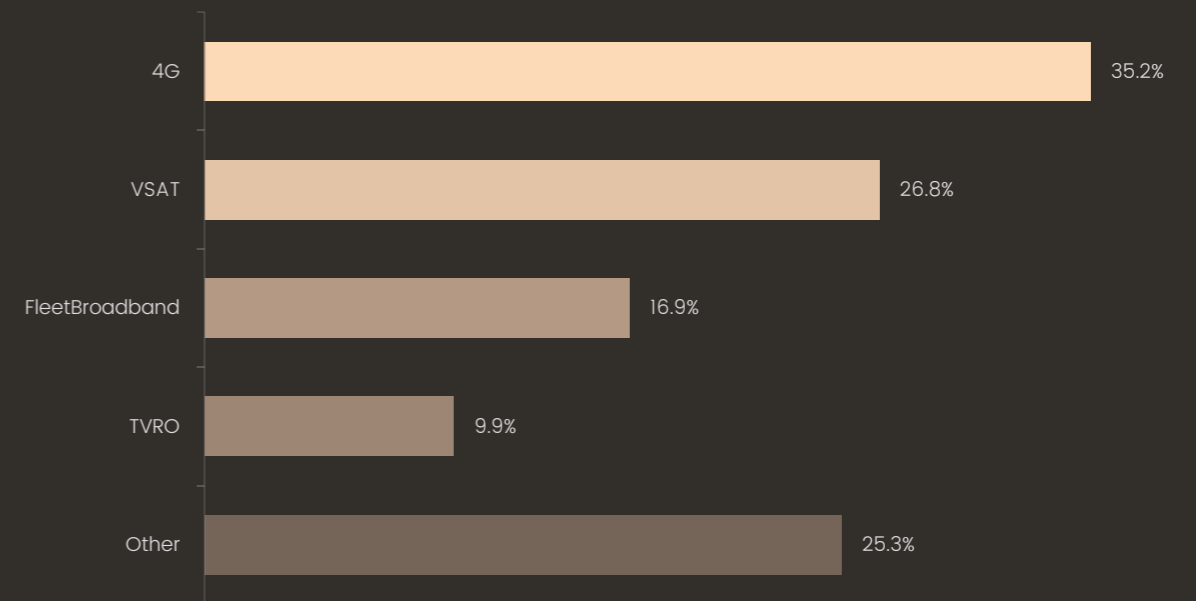
## Yacht size breakdown



## Yacht type breakdown

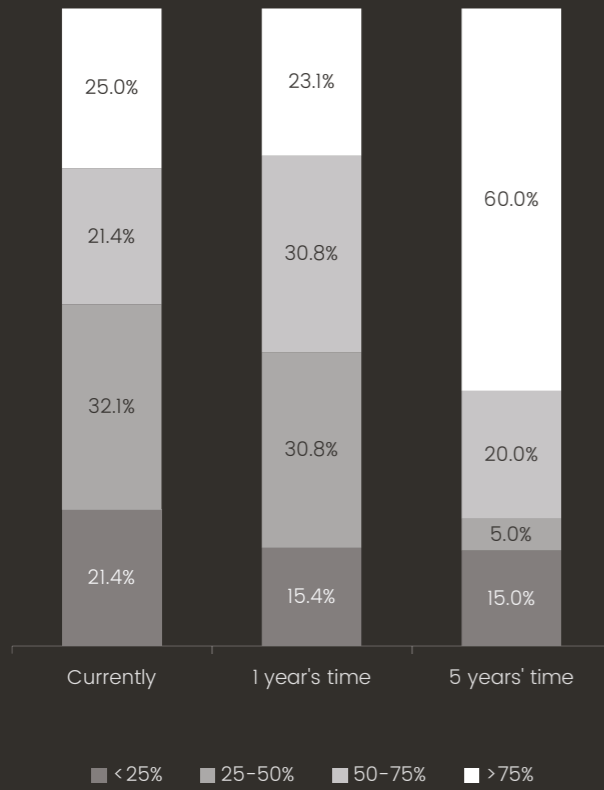


## On board communication technology

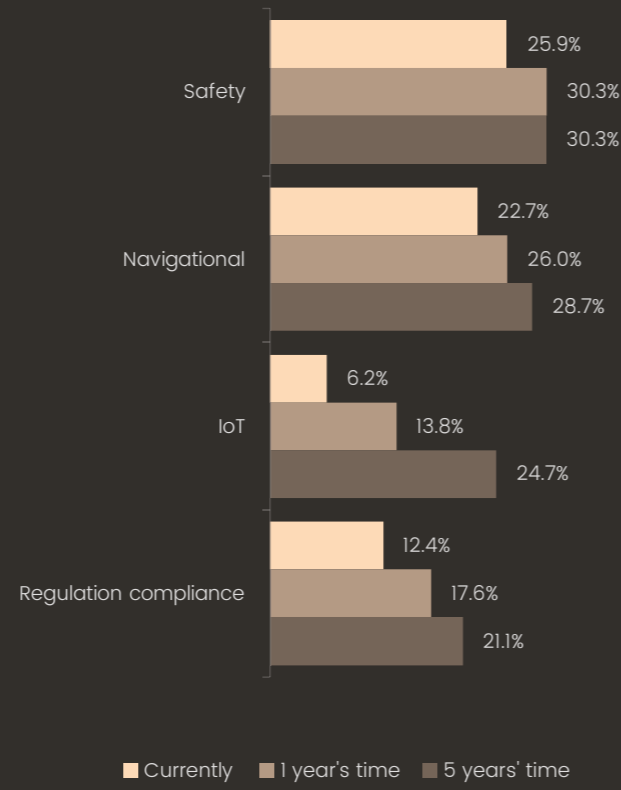


# Connectivity usage and demands

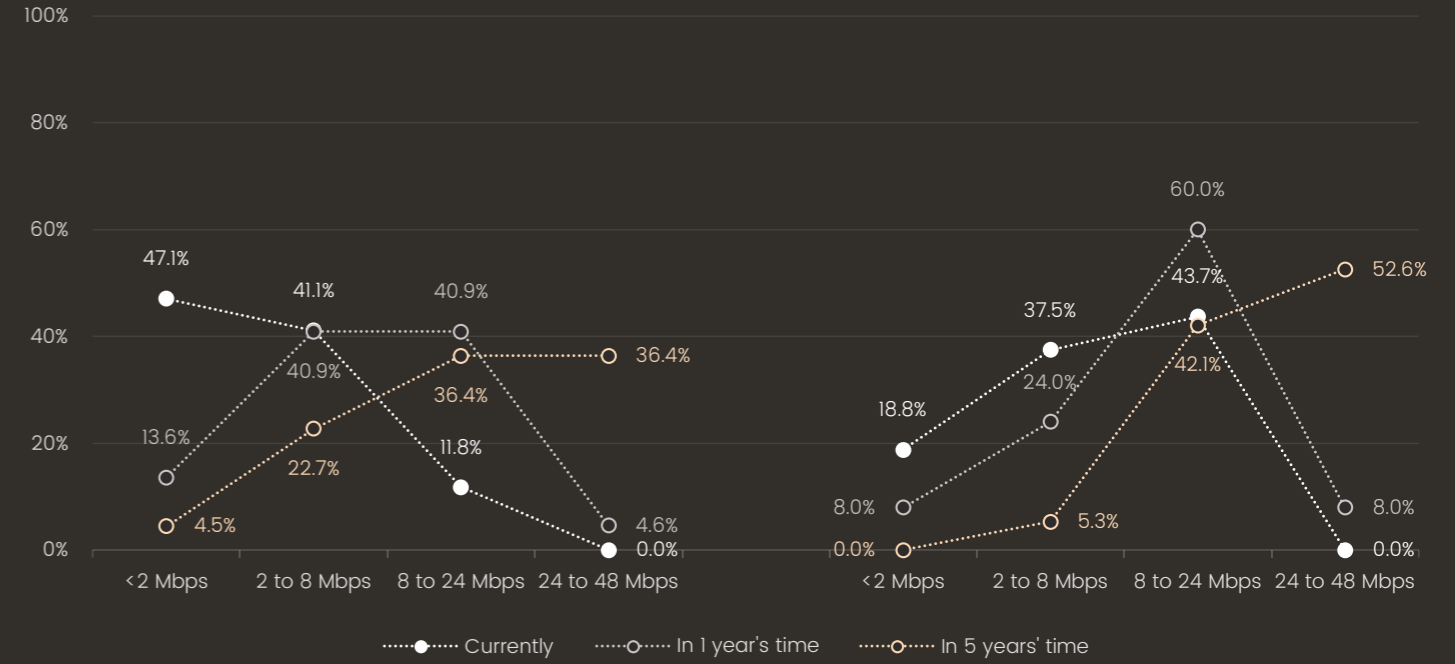
### VSAT connectivity usage



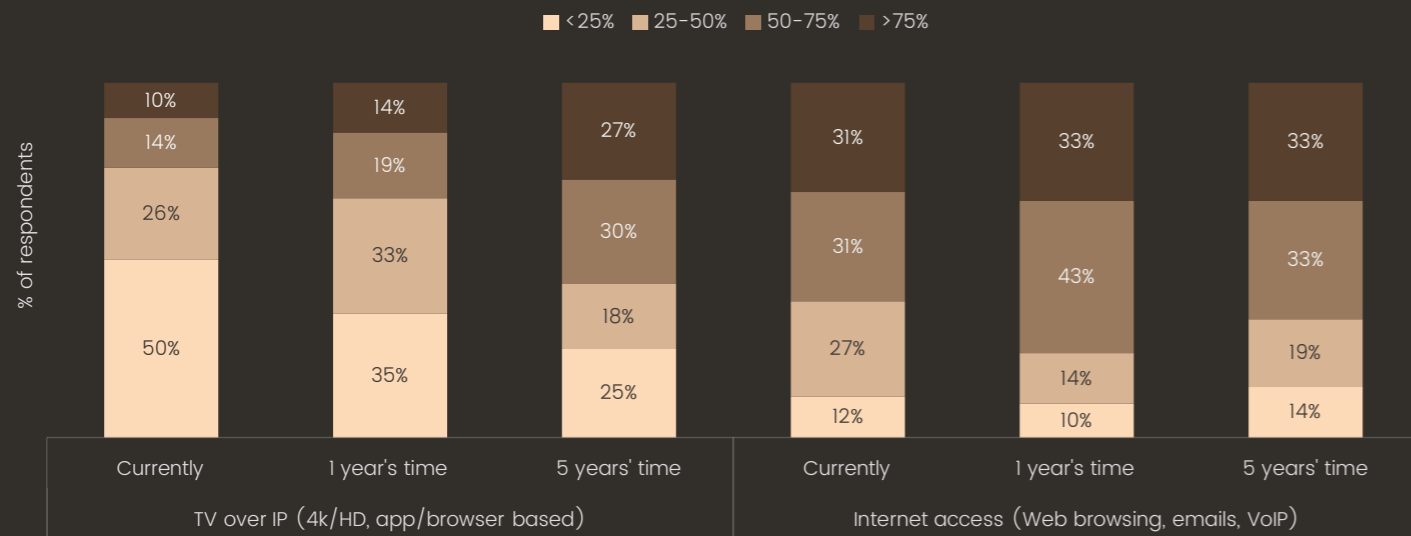
### Operational connectivity usage



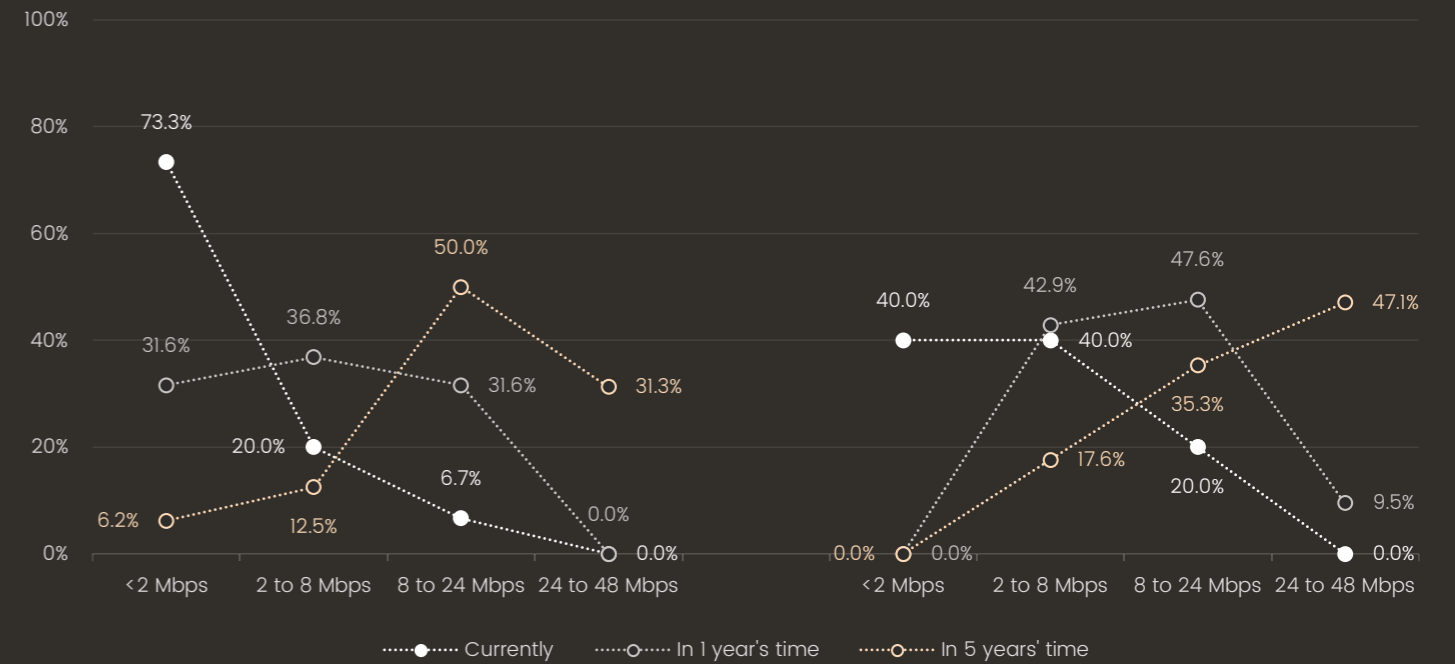
### MIR speed currently and expectation



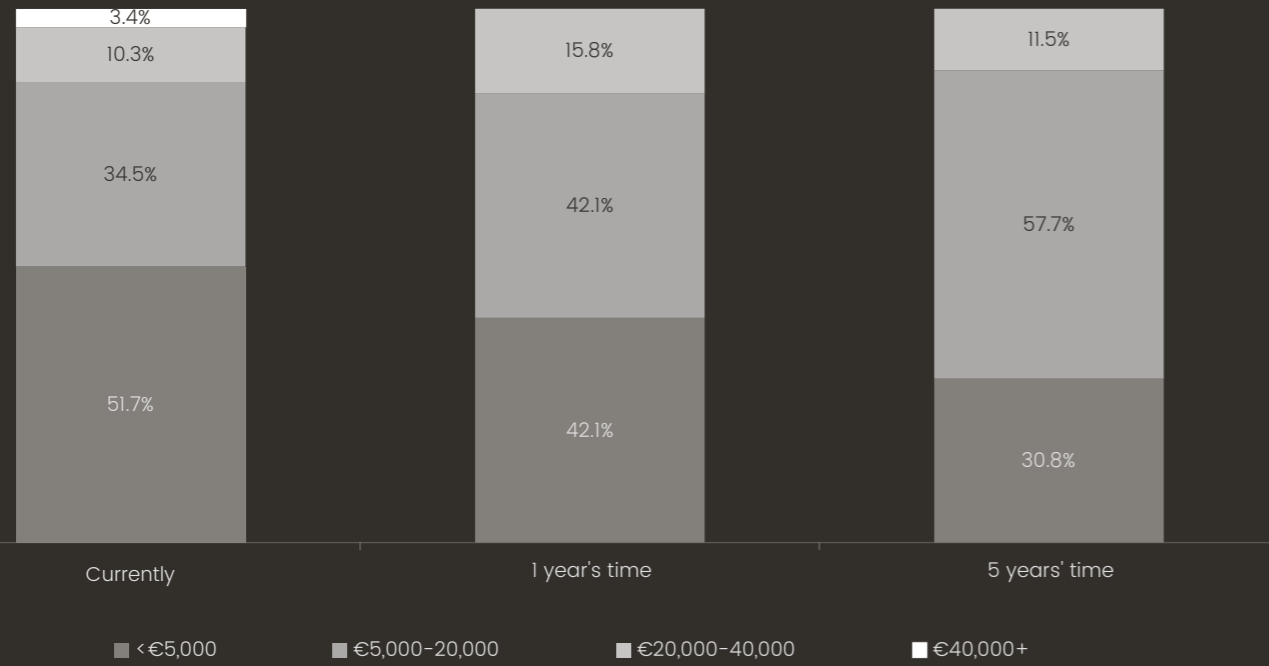
### Respondent's current and anticipated leisure connectivity usage time



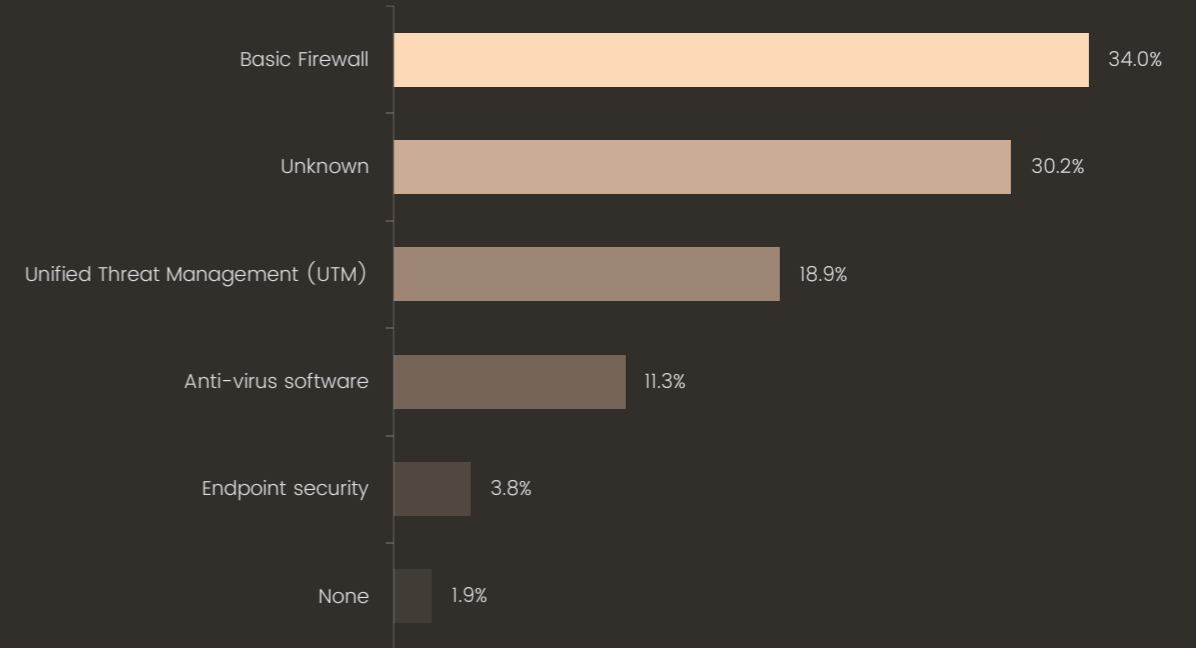
### CIR speed currently and expectation



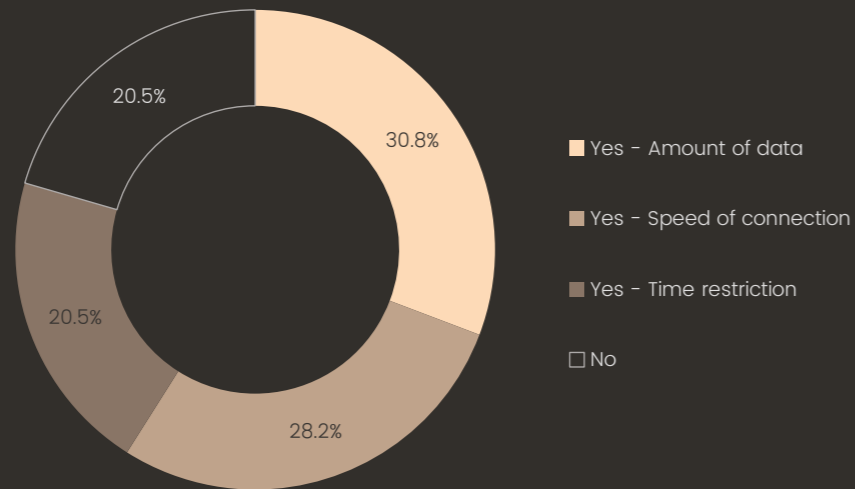
Current satcomm cost and expectations



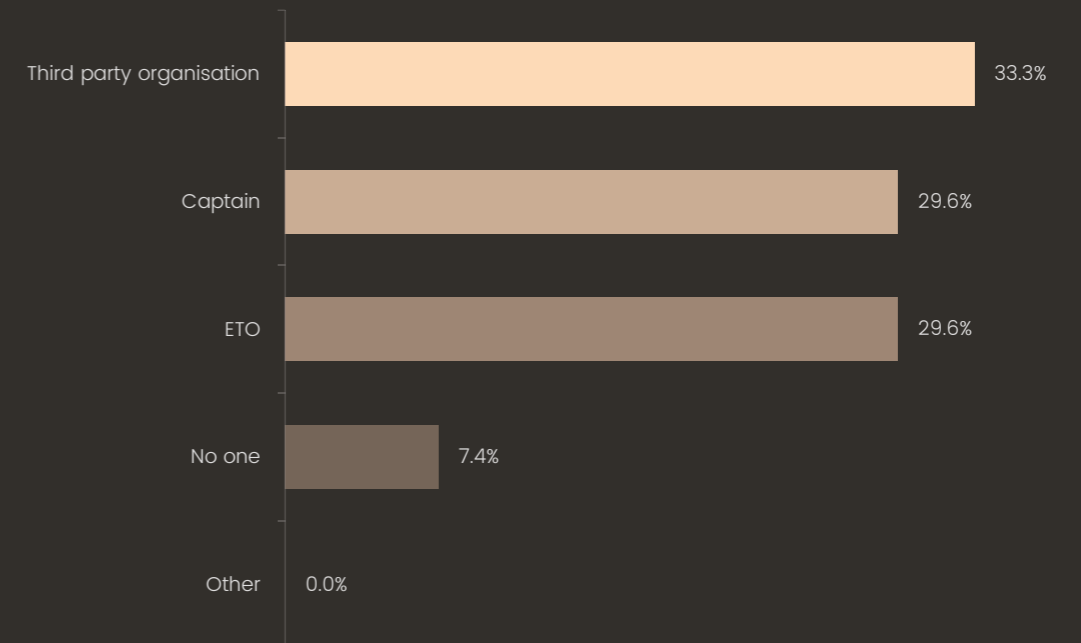
Do you have any of the following cyber security measures in place?



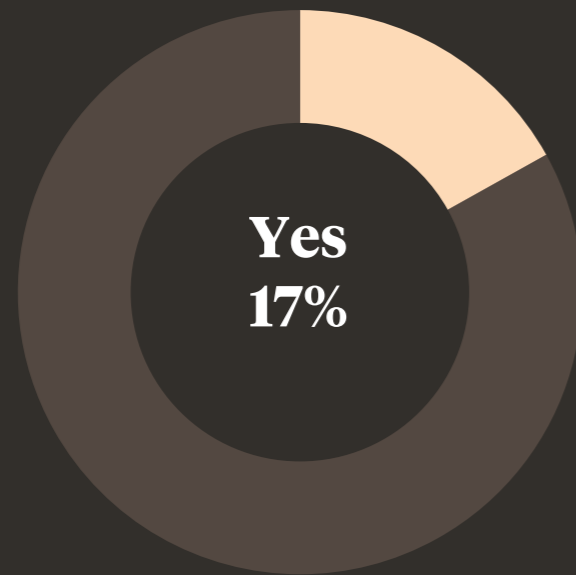
Do you restrict crew internet usage?



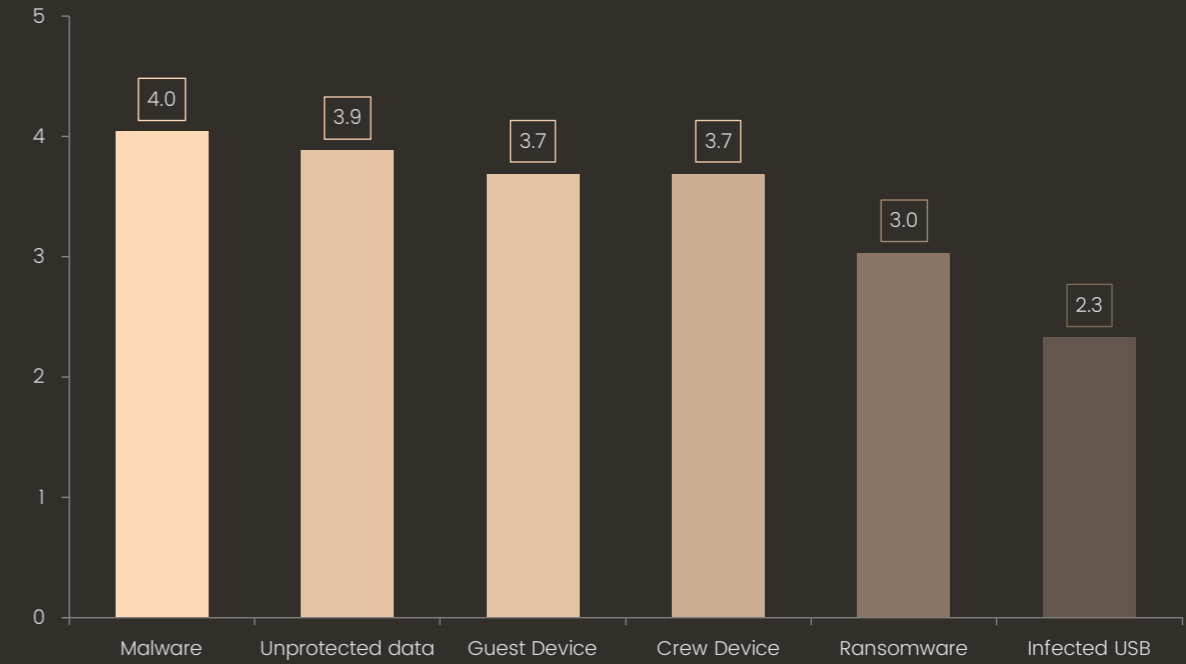
2019 Cyber security management



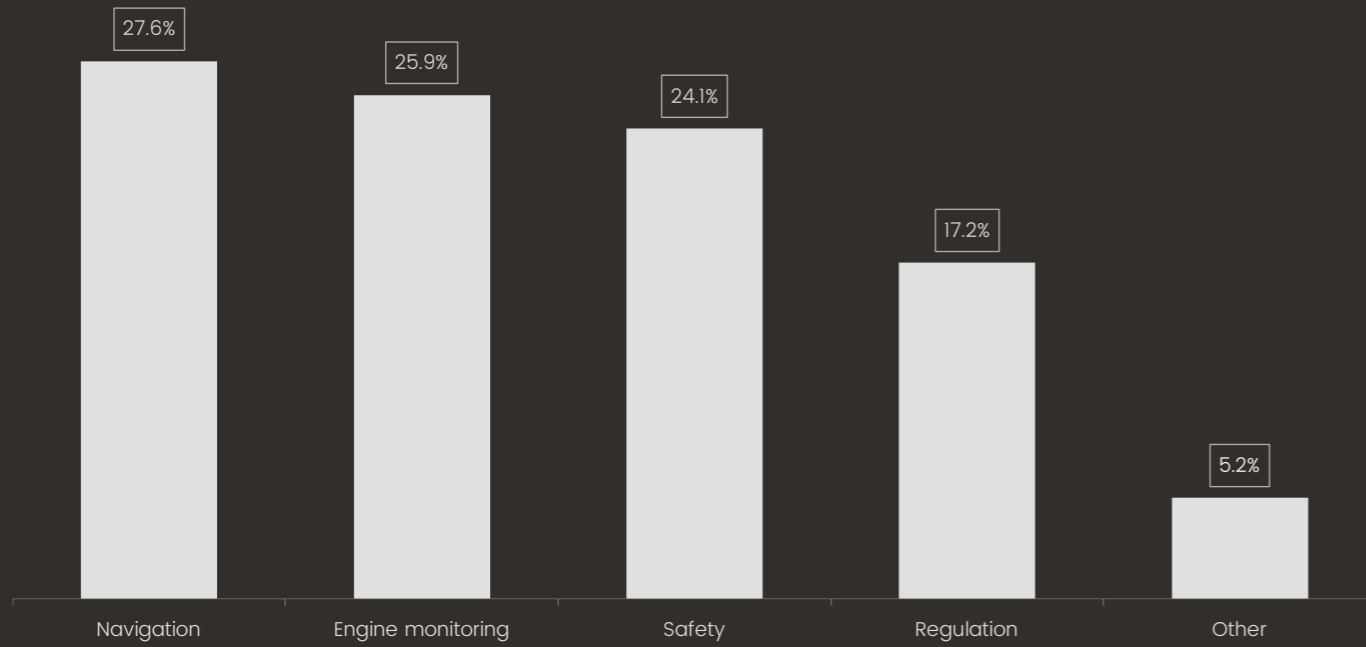
**Do you know the difference between anti-virus software and network endpoint security?**



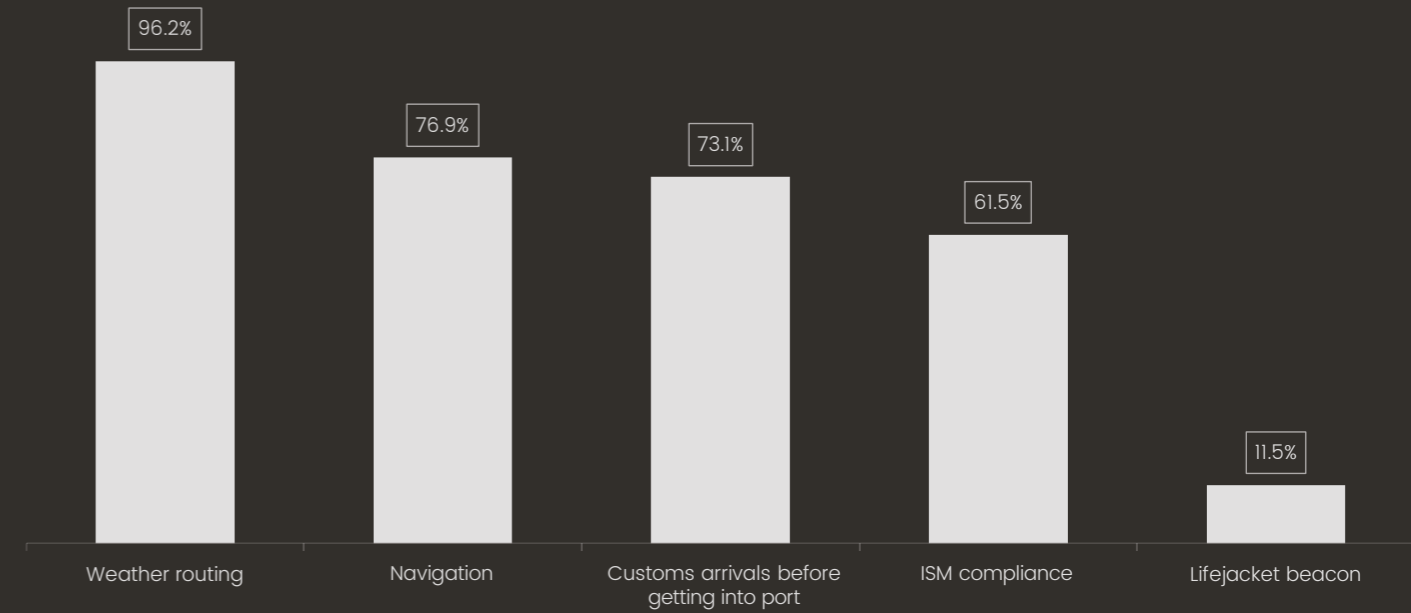
**Threat to cyber security**  
(Average threat score out of a maximum of 5 and a minimum of 1, higher score deemed more threatening)



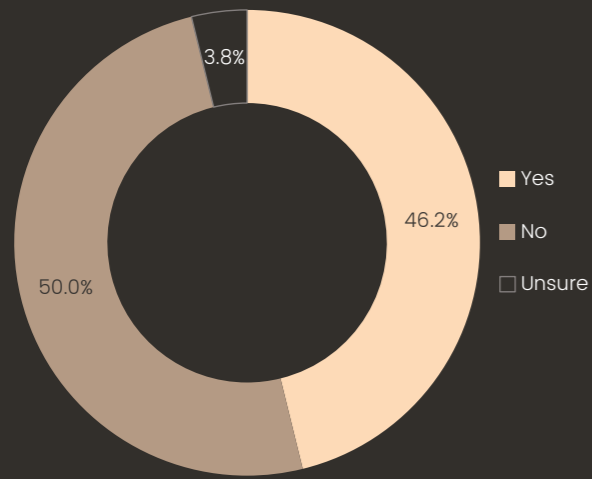
**Purpose for on-board data collection**



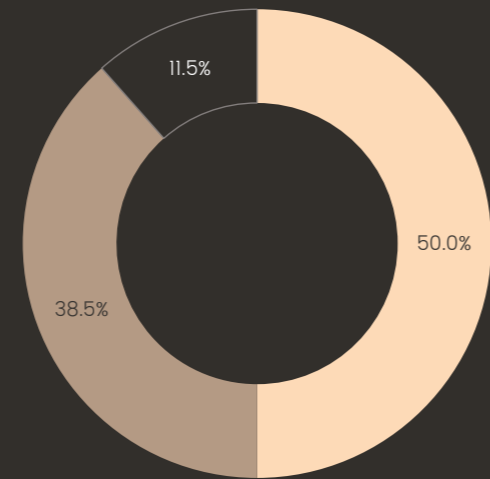
**VSAT usage on safety and regulation**



Do you send collected data ashore?



Are you using applications to analyse that data?



Communication integration



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The Superyacht Agency  
Lansdowne House  
3-7 Northcote Road  
London SW11 1NG  
United Kingdom  
**+44 (0)20 7924 4004**  
**consulting@thesuperyachtgroup.com**  
**thesuperyachtagency.com**

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