



Maritime Autonomous Systems Survey 2020



(Image courtesy of ASV)

This report provides an insight into current business activity in Maritime Autonomous Systems (MAS) in the UK. It has been compiled by the Society of Maritime Industries' MASG Council.

The data for this report was collected in the form of an on-line questionnaire sent to senior managers of UK businesses in the maritime engineering sector.

Summary of Findings:

- 33 organisations responded to this survey, 21% of which reported MAS as responsible for more than 50% of their turnover.
- 37% of the organisations were manufacturers, 18% service providers, 18% system users, 15% agents and distributors and 12% academic institutions.
- A basic calculation gives a turnover of £1259m, an increase of 23% from 2018, or 185% from 2016.
- 15% of companies said that exports accounted for more than half their business.
- Although still a relatively new sector over 75% of companies had been working in this field for more than 4 years.
- MAS companies were working in a wide range of applications with marine science research, environmental monitoring, defence and oil & gas being the top four.
- 88% of respondents cited Europe as an important export market, with 27% stating it was their main export market, despite Brexit.
- The COVID pandemic, the price of oil and the lack of people with appropriate skills are impacting the sector and holding back growth, amongst other barriers.
- Looking ahead to 2025, respondents predict substantial growth in the number of people employed on MAS.

The UK's Maritime Autonomous Systems sector continues to grow. Emerging from the subsea robotics industry, with a number of exciting new start-ups beginning to make their mark, applications are being identified in an expanding number of fields. UK based companies are playing a leading role and export sales are growing, reflecting a growing maturity in the global market. The Covid-19 pandemic, oil price variability, access to finance and availability of people with appropriate skills have slowed down investment and growth, but confidence is high that the sector will grow substantially in the period to 2025.

The Society of Maritime Industries is the voice of the UK's maritime engineering and marine science and technology sectors. The Maritime Autonomous Systems Group provides a focus for UK companies with an interest in Maritime Autonomous Systems and is working to promote understanding, skills and growth of the sector.

Company Overview:

33 organisations responded to the survey with 18 organisations (54%) having been in the Maritime Autonomous Systems (MAS) sector for over 5 years. When the results are compared to the last survey (2018) there was a decrease in companies who were new to the sector, from 6 in 2018 to 0 in 2020. Although the results are not directly comparable as there were 60 responses in 2018 and only 33 in 2020.

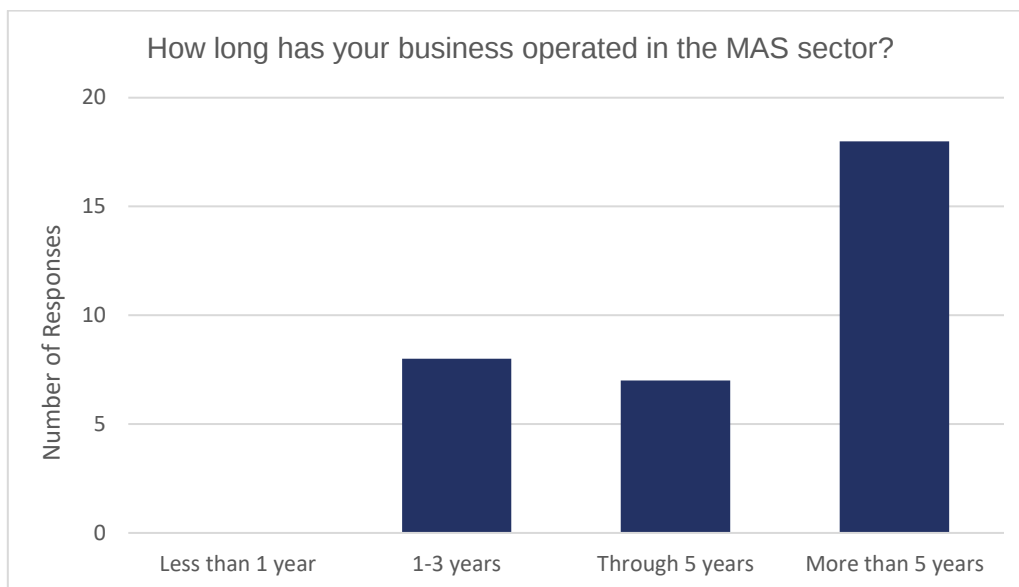


Figure 1: Comparative view of time period companies have worked in the MAS sector

Main Business Areas:

37% of responses came from manufacturers (both platforms and sensors). This was followed by system users and service providers, both at 18%. The remaining percentage was made up of 15% agents and distributors and 12% academic institutions.

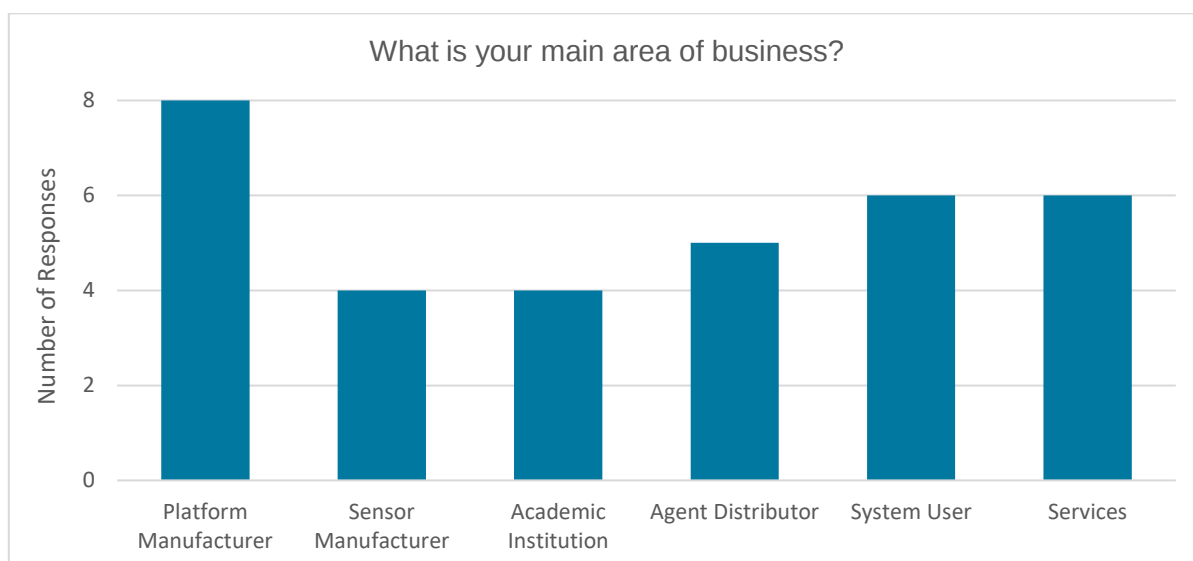


Figure 2: Main areas of business

Turnover:

Respondents were asked to state their annual MAS related turnover. 15% reported a MAS turnover of more than £50 million, as opposed to 10% in 2018. The most popular response was still up to £250K with 24% of responses in 2020 and 25% in 2018. Respondents were then invited to state this figure as a proportion of their organisation's overall turnover and 21% derived more than half their sales from MAS, this is compared to 18% in 2018. Overall MAS is still a small part of most organisation's business. 55% of companies reported that MAS turnover was between 0-10% of their annual turnover, this is slightly improved from 59% of organisations in 2018.

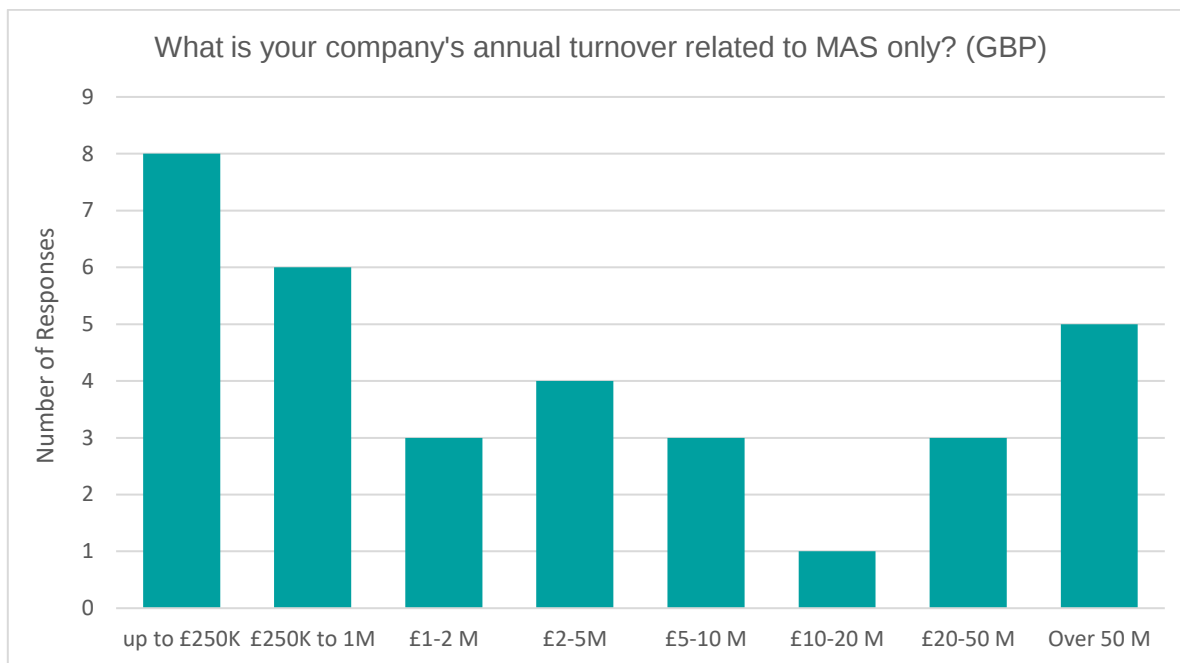


Figure 3: Size of Company's Annual Turnover

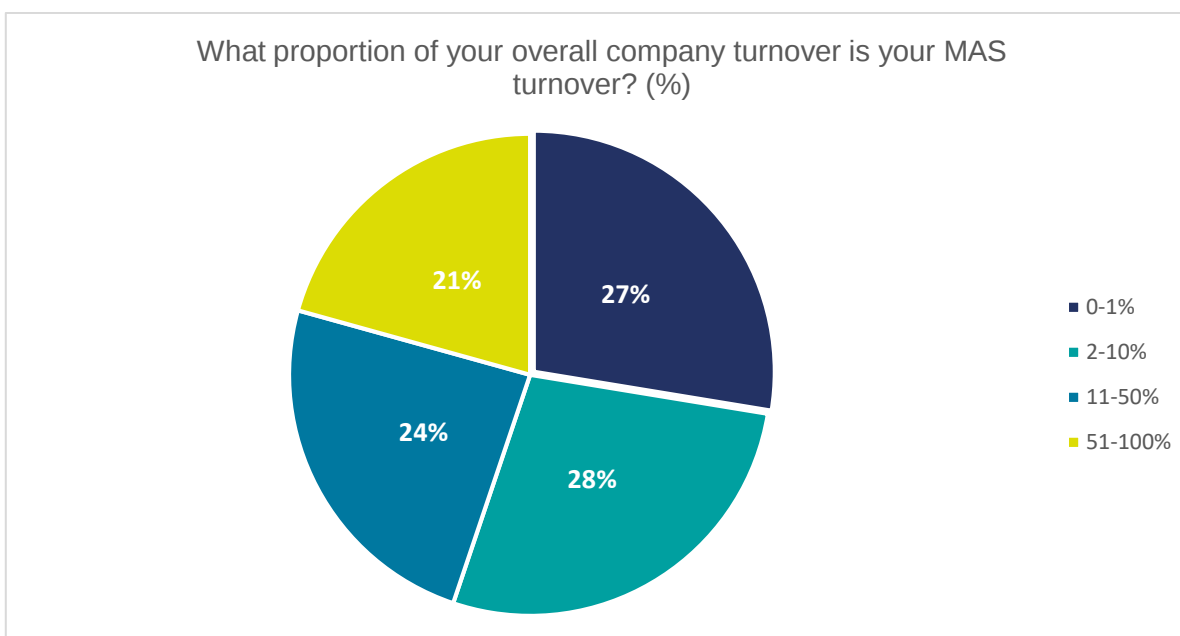


Figure 4: Proportion of overall Turnover that is MAS Turnover

Export Sales:

15% of respondents reported that their overseas sales were over 50% of the total, compared to 13% in 2018. In the 2018 survey 52% of organisations reported that 0-1% of total sales were exports, this was greatly improved to 37% in 2020. This could reflect the increasing maturity of MAS as a global market.

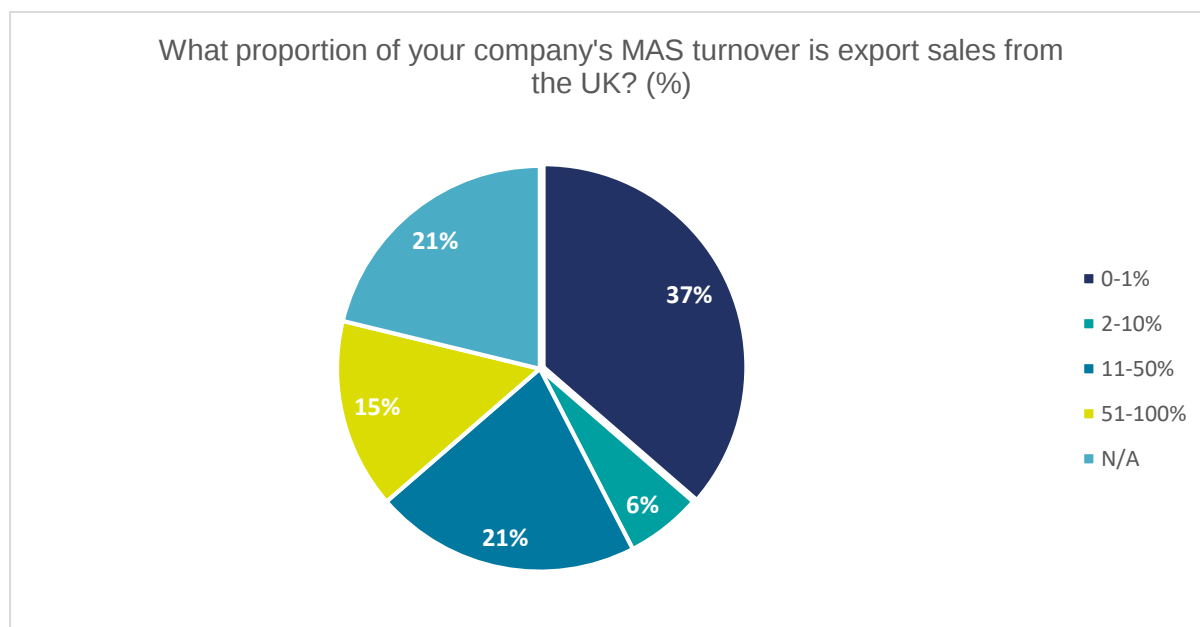


Figure 5: Proportion of company's MAS turnover that is export sales from the UK

Employment:

64% of respondents reported employing 10 people or less in the MAS sector, this is compared to 60% in 2018. Only 1 respondent (3%) reported employing over 50 people in the MAS sector, compared to 6 (10%) in 2018. However, this could just be a reflection of the smaller number of respondents this year.



Figure 6: Number of full-time employees in the MAS sector

MAS Applications:

Environmental monitoring and Marine Science research were the most common market sectors, this is a substantial change from 2018 when the most common market sectors for MAS were Defence and Oil and Gas. This likely reflects the increase in the MAS market globally and the increase in MAS being used in different sectors. Having said that Defence and Oil and Gas were still significant, as was Renewable energy, an emerging sector.

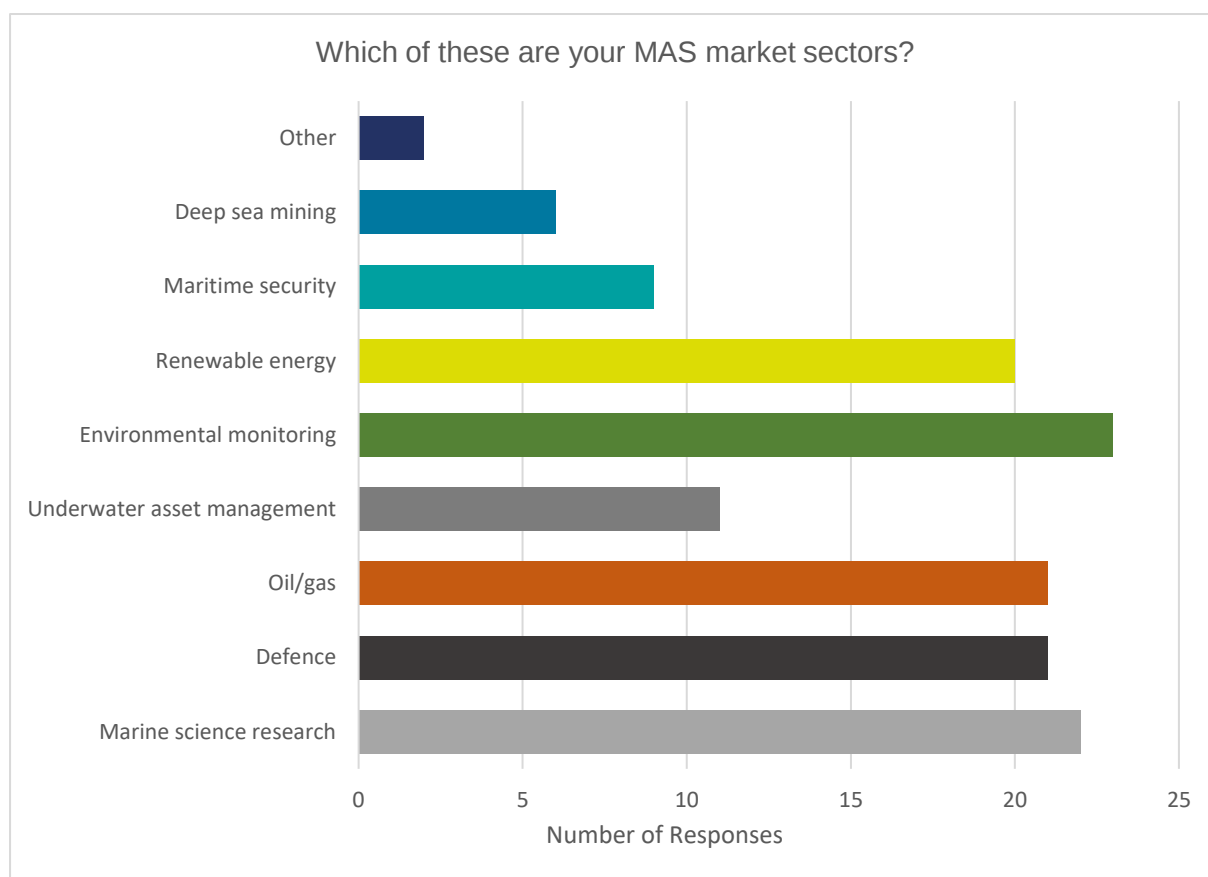


Figure 7: MAS Market Sectors

Market Activity:

When asked to select the main application for their products and services the Defence and Oil and Gas sectors combined accounted for 55% of responses. Following these two sectors, Marine science research accounted for 18% of responses, which is compared to 12% in 2018.

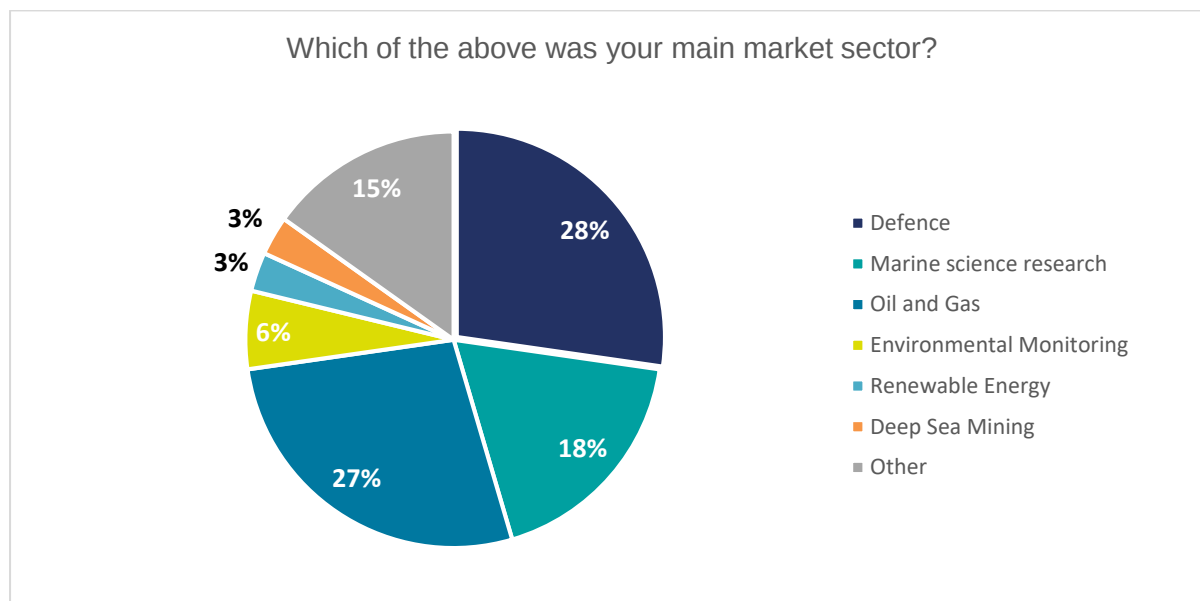


Figure 8: Main Market Sector

*Others included: Hydrographic and environmental survey, Oil spill response emergencies, Academic Research and Development, Inland waterways, Qualifications

Export Markets:

Europe (excluding UK) was the most common market that respondents exported to, with 88% of respondents selecting it. This was closely followed by Asia-Pacific, with 72% of respondents selecting this export market. USA and Canada and Middle East were also significant (64% and 52% respectively).

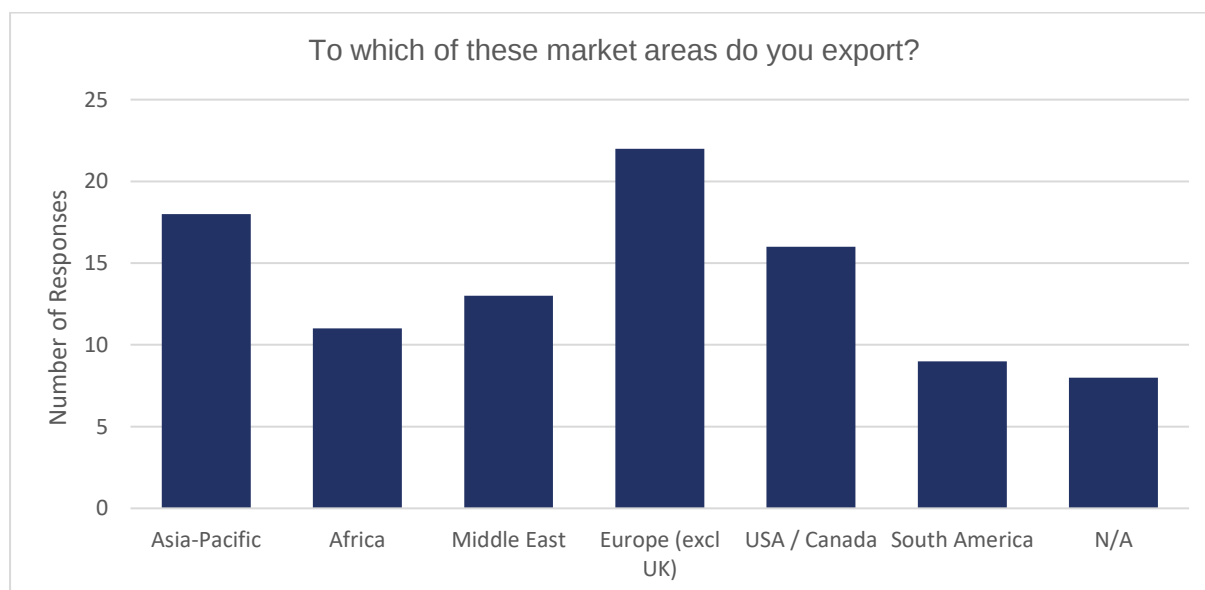


Figure 9: Market Export areas

When asked what the main export region was in the last year, 27% of respondents selected Europe (excluding UK), this is increased from 25% of respondents in 2018. Europe was followed by Asia-Pacific with 21% of the respondents citing that as their main export market. Similarly, to 2017 and 2018, the most common response was 'Not Applicable', with 34% of respondents selecting this. There was not much difference between the three remaining markets – USA/Canada, South America and Australia.

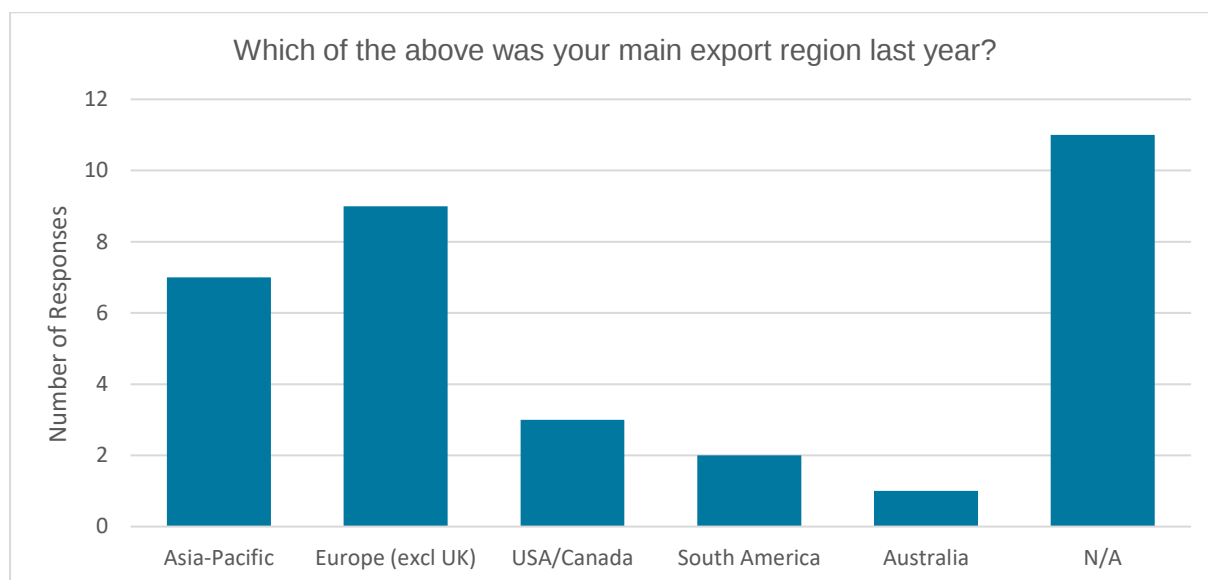


Figure 10: Main Market Export area

Business Growth:

Unsurprisingly the COVID pandemic was thought to have had the biggest impact on business over the last 12 months, with only 3 respondents saying it had no effect. This was followed by the price of oil, skill shortages and finance.

A distillation of the additional comments made suggest a broad range of factors which the MAS sector believes are holding them back. In no particular order these were:

- Access to early-stage capital
- Brexit and associated non-tariff trade barriers between the UK and Europe and the UK and Northern Ireland.
- Unpredictable procurement by UK government bodies

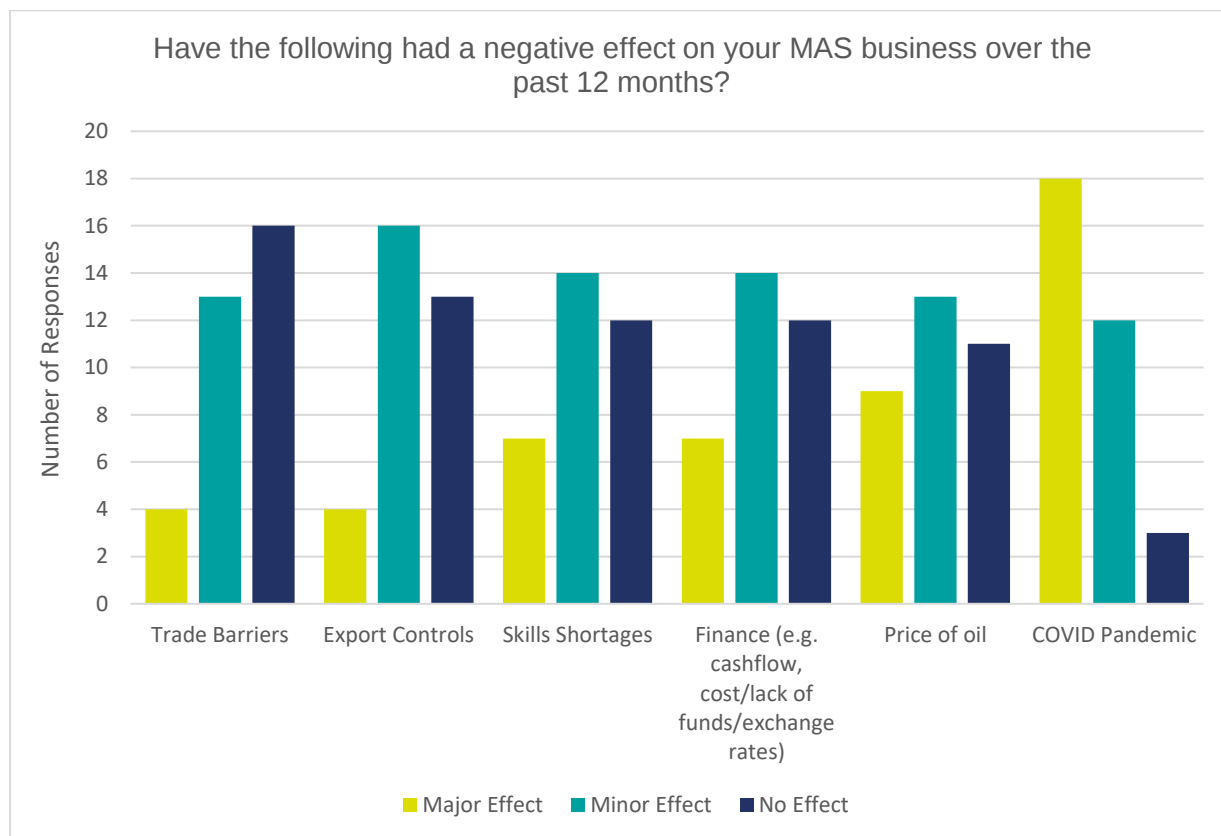


Figure 11: Negative effects on MAS Business

MAS Growth:

A total of 5 respondents believe that by 2025 they will have 101-500 employees working on MAS projects, this is compared to 1 respondent who had 100+ working in the sector in 2020. Only 9 respondents thought they would have 0-10 employees working on MAS by 2025, compared to 19 organisations in 2020. Both of these facts imply that the MAS Sector will continue to grow.

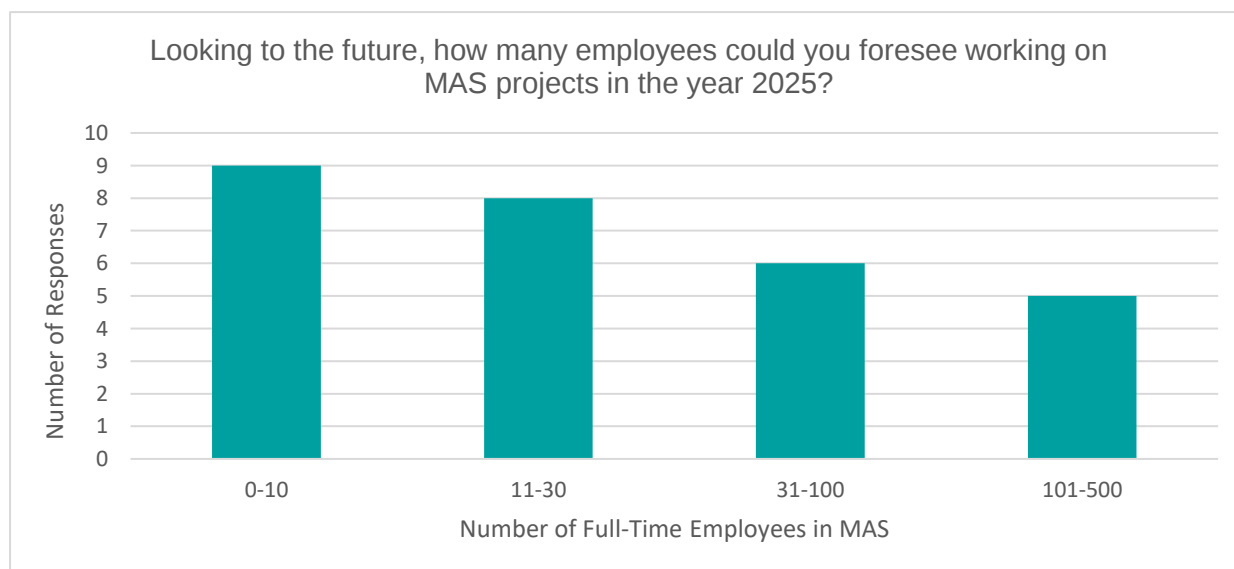


Figure 12: Future Employees in MAS Projects by 2025

About this Survey:

Maritime Autonomous Systems (MAS) cuts across many of the interests of members of the Society of Maritime Industries (SMI). MAS impinges on operations in marine science research, the offshore energy market, deep sea mining, delivering a seismic shift in maritime warfare and security operations, and in maritime transport, where autonomy has the potential to improve the integration and effectiveness of both cargo and passenger transport.

Across all of these areas, the UK looks to take a leading position, driven by development of the required technology, evolving the regulatory environment and ensuring we sustain the cutting-edge skills and knowledge already present in our industrial and academic bases.

In 2016 SMI took the decision to create a new interest group to focus on the business of MAS and formed a MAS Group (MASG) Council of member experts to guide future policy. One of the Council's first actions was to commission a base line survey of UK companies in the MAS sector to provide an in-sight into current business activity and this survey is the third in the series.

The data for the 2020 report was collected in the form of a questionnaire emailed to senior managers of UK businesses currently active in the MAS sector.

About the Society of Maritime Industries (SMI):

SMI is the voice of the UK's maritime engineering and business sector promoting and supporting companies which design, build, refit and modernise ships, and supply equipment and services for all types of commercial and naval ships, ports and terminals infrastructure, digital technology, maritime defence and security, marine science and technology, maritime autonomous systems and marine renewable energy.

The MASG Council sets the policy and guides the activities for the maritime autonomous systems market area within the SMI, utilising the extensive expertise of its members.