

## Maritime Autonomy and Remote Operations

|                            |  |
|----------------------------|--|
| <b>Lead department</b>     | Department for Transport (DFT); Maritime and Coastguard Agency (MCA)   |
| <b>Summary of proposal</b> | The proposal amends the Merchant Shipping Act 1995 (MSA) and related legislation through primary powers to ensure Maritime Autonomous Surface Ships (MASS) can be regulated effectively. It aims to support the introduction of autonomous shipping technologies in the UK and manage risks. |
| <b>Submission type</b>     | Impact assessment (IA) – 18/03/2022  |
| <b>Legislation type</b>    | Primary legislation  |
| <b>Implementation date</b> | tbc  |
| <b>Policy stage</b>        | Final  |
| <b>RPC reference</b>       | RPC-DFT-MCA-5113(2)  |
| <b>Opinion type</b>        | Formal   |
| <b>Date of issue</b>       | 3rd May 2022   |

## RPC opinion

|                           |   |
|---------------------------|---|
| <b>Rating<sup>1</sup></b> | <b>RPC opinion</b>  |
| <b>Fit for purpose</b>    | The quality of the evidence and analysis is considered sufficient and in line with scenario two of the RPC guidance on primary legislation IAs <sup>2</sup> . The IA has not provided an EANDCB figure at this stage for validation but has indicated the likely scale of impacts on businesses. The RPC expects future IAs on related secondary legislation to quantify the impacts. |

## Business impact target assessment

|   | <b>Department assessment</b>         | <b>RPC validated</b>  |
|---|--------------------------------------|---|
| <b>Classification</b>   | Qualifying regulatory provision (IN) | Qualifying regulatory provision (IN) – subject to confirmation at secondary legislation IA stage. |
| <b>Equivalent annual net direct cost to business (EANDCB)</b> | Not quantified                       | Further IA to be submitted at secondary   |

<sup>1</sup> The RPC opinion rating is based only on the robustness of the EANDCB and quality of the SaMBA, as set out in the [Better Regulation Framework](#). RPC ratings are fit for purpose or not fit for purpose.

<sup>2</sup> RPC guidance on primary legislation IAs - <https://www.gov.uk/government/publications/rpc-case-histories-primary-legislation-ias-august-2019>

|   |                |  |
|---|----------------|--|
|   |                | legislation for validation<br>of an EANDCB figure. |
| <b>Business impact target<br/>(BIT) score</b> | Not quantified | (see above)  |
| <b>Business net present value</b>             | Not quantified |  |
| <b>Overall net present value</b>              | Not quantified |  |

## RPC summary

| <b>Category</b>                             | <b>Quality<sup>3</sup></b> | <b>RPC comments</b>   |
|---|----------------------------|---|
| EANDCB                                      | <b>Green</b>               | The Department provides sufficient justification for why they cannot calculate an EANDCB figure for validation at this stage. The IA has also identified the direct impacts on businesses and indicated the potential scale of impacts in line with 'scenario two' of the RPC primary legislation guidance.   |
| Small and micro business assessment (SaMBA) | <b>Green</b>               | The SaMBA explains the structure of the market in scope, including an estimate on the number of small and micro businesses (SMBs) which may be impacted by the proposal. The IA does not propose any exemption for SMBs as doing so would pose safety concerns and exclude smaller businesses from the benefits of the proposal. The SaMBA can be strengthened by providing evidence to support the claim that SMBs would not be disproportionately affected. |
| Rationale and options                       | <b>Good</b>                | The IA sets out the rationale for intervention clearly, presenting market failures arguments on externalities and moral hazard. The IA provides a sufficient explanation on why non-regulatory options would not meet the policy objectives.  |
| Cost-benefit analysis                       | <b>Satisfactory</b>        | The IA includes a qualitative assessment of impacts, including details of the methodology and a discussion of key risks and uncertainties. The IA provides a scale of impact using a RAG rating system but would benefit from clarifying the input assumptions used to inform these ratings. The IA would also benefit from discussing the proposal's potential impacts on other groups such as the regulators, ports authorities, and insurers.              |
| Wider impacts                               | <b>Satisfactory</b>        | The analysis of wider impacts is considered satisfactory and appears to be based on proportionate evidence. The IA includes an assessment on competition, equalities, health, innovation, and justice.  |
| Monitoring and evaluation plan              | <b>Weak</b>                | The IA includes a brief monitoring and evaluation (M&E) plan, which sets out the key objectives of the proposal in a SMART format. The IA needs to be improved by setting out the timeframe for evaluation and more details on the success metrics, data collection methods and evaluation techniques.  |

<sup>3</sup> The RPC quality ratings are used to indicate the quality and robustness of the evidence used to support different analytical areas. Please find the definitions of the RPC quality ratings [here](#).

## Summary of proposal

Under the current maritime regulatory framework, MASS operators must prove the safety case and obtain exemptions from the maritime safety requirements to operate under the UK Flag and in UK waters. A review by the Maritime Autonomy Regulation Lab (MARLab) identified several issues in the current framework that could prevent the efficient operations of MASS and present a barrier to market growth and innovation.

The proposal will amend the Merchant Shipping Act 1995 (MSA), the Harbours Act 1964, and the Aviation and Maritime Security Act 1990 through primary legislation to provide the powers to regulate all MASS regardless of size or degree of autonomous operation. The IA explains that the primary objective of the proposal is to support and enable the introduction of MASS technologies whilst maintaining health, safety, security and environmental standards and fairly distributing liabilities between stakeholders. It also seeks to ensure an equivalent level of oversight is given to MASS and non-MASS.

The IA covers the primary legislation to take powers to regulate MASS in the UK and qualitatively assess the impacts of the proposal on businesses. The Department explains that quantification of costs and benefits of the proposal will be provided in further IAs supporting secondary legislation.

### Linkages to previous submission

The RPC has previously issued an informal opinion on this proposal's consultation stage IA<sup>4</sup>. The RPC notes that this final stage IA includes relatively few changes to the consultation stage IA. This opinion repeats many of the comments and views raised previously and also includes points to reflect both the amendments made by the Department and the shift in the RPC focus to final stage considerations.

## EANDCB

The IA explains that it has not been possible to calculate an EANDCB figure for RPC validation at this point due to data limitations and uncertainty over the contents of the secondary legislation. Although an EANDCB estimate has not been provided, the IA identifies the key impacts to business and presents a potential scale of impact, which appears to be supported by evidence from stakeholders. This approach is consistent with 'scenario two' of the RPC guidance on primary legislation IAs. The RPC expects to see a further IA submitted at the secondary legislation stage for EANDCB validation in scope of the Better Regulation. A summary of potential costs and benefits to the main stakeholders are provided on page 34. The IA provides a potential scale of impact of the preferred option against the counterfactual using a RAG rating system in figure 17 (page 45).

### Direct/indirect impacts

---

<sup>4</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1018472/future-of-transport-regulatory-review-maritime-autonomy-impact-assessment.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1018472/future-of-transport-regulatory-review-maritime-autonomy-impact-assessment.pdf)

The IA states that the impacts of the proposal are ‘indirect’ as the proposal provides powers to regulate MASS but does not impose any immediate impacts on businesses until secondary legislation is implemented. As explained in the RPC primary legislation guidance, the impacts of secondary legislation should not be considered ‘indirect’ purely because a proposal is at the primary legislation stage. The IA must clarify the direct and indirect impacts of the proposal on businesses in the secondary legislation IA stage. The IA identifies a number of costs and benefits to business that the Department has not been able to quantify at this stage. The RPC expects future IAs to quantify the potential impacts where possible.

### Counterfactual

The IA provides a sufficient explanation of the counterfactual, including the current and expected future structure of the UK shipping sector and number of seafarers. The IA also considers the potential risks and unintended consequences of the counterfactual option, such as reputational risks, gaps in powers and barrier to growth in the MASS market. The IA would be strengthened by clarifying whether the counterfactual was using existing regulations with exemptions or whether this approach would be untenable in the long-term. In addition, the IA would benefit from discussing whether other MASS related interventions identified on page 25 have been accounted for in the counterfactual and how the impacts of the proposal have been separated from these other policies. Please see also comments under ‘cost benefit analysis’ below.

## **SaMBA**

### Scope

The IA sets out the structure and market share of the UK water transport sector in figure 18 (page 49), which indicates that SMBs represent a large proportion of the markets that will be affected (94.3%). However, it is unclear whether the number provided includes MASS R&D companies and small vessels, such as vessels which operate under a sole proprietorship or partnership, and the degree to which the ‘minimum efficient scale’ point prevents SMBs entering the market. The SaMBA would benefit from providing more clarity in this area.

### Exemption and mitigation

The IA explains that the proposal provides broad powers to permit increased business activity and improve access into the MASS market. As such, the IA explains that all businesses will be in scope of the proposal because exempting SMBs may pose safety concerns and may exclude them from the benefits of the proposal.

The Department does not expect the proposal to affect SMBs disproportionately. It explains that the proposal may reduce barriers to entry for smaller businesses and increase competitiveness in the market. The SaMBA could also consider the potential for the MASS regulation to liberalise the SMB sector further. The SaMBA would be strengthened by providing evidence to support why SMBs are not expected to be disproportionately impacted by the proposal. While it may not be possible for

SMBs to be exempted from the new regulations due to safety considerations, the analysis could be improved by presenting evidence on whether parts of the legislation could be refined or applied differently for SMBs to reduce the administrative burden or costs of compliance. Furthermore, the IA would be improved by separately analysing any potential competition impacts on businesses generally and noting any aspects of this analysis that raise particular concerns for SMBs in the SaMBA.

## Rationale and options

### Rationale

The IA provides a good summary of the rationale for intervention, including discussion of market failures, such as externalities and moral hazards. The IA explains that the current framework only accounts for non-MASS, and that MASS can only operate legally by relying on exemptions and equivalences to the existing legislation. This approach creates a legislative gap for MASS, limiting the safe operation of these ships and presenting a barrier to innovation and growth in the market. The evidence on research and development (R&D) spillovers seems to relate predominantly to the space sector. The IA would benefit from including broader evidence of R&D spillovers and, in particular relevant evidence on the maritime sector if available. In addition, the IA should explain each of the three Acts it propose to amend in more detail, and clarify which Act each change relates to.

### Options

The IA considers two options against the 'do minimum' counterfactual option. Option 1 is the same as the 'do minimum' option of not implementing changes to the legislation until 2028, when the International Maritime Organisation (IMO) is expected to have adopted a new regulatory instrument. Option 2 is to legislate in advance of the IMO (the preferred option). Under option 2, the proposal will amend the current framework through primary legislation to provide power to regulate all MASS. Following RPC comments at the consultation stage, the IA helpfully includes a discussion of non-regulatory options considered and why these interventions would be insufficient to achieve all the intended policy outcomes. The IA would benefit from considering related policy measures, such as autonomous vehicles and drones, and exploring whether there are any lessons learnt that could be incorporated into this proposal. In addition, the IA would benefit from an international comparison section to discuss whether other countries are also planning to legislate ahead of the IMO and what the likely impact of that will be.

## Cost-benefit analysis

The IA identifies the key stakeholders affected by the proposal and provides a qualitative discussion of the potential costs and benefits of the policy proposal; this is summarised in figure 6 (page 34). While the IA explains that it has not been able to quantify these impacts, it has included a RAG rating on the expected impacts to provide a potential sense of scale. Although this is a helpful tool to indicate potential

impacts, the IA would be improved by clarifying the assumptions and evidence used to determine these ratings.

The IA would also benefit from discussing the proposal's potential impacts on other groups such as the regulators, ports authorities, and insurers. The IA mentions that the proposal would generate costs to the MCA well below the *de minimis* EANDCB threshold. The Department should be clear that the *de minimis* threshold refers to the net direct cost to business, and therefore, it would not only include regulatory costs to business. The IA should explain whether the proposal would require the regulator to implement new systems and processes to ensure autonomous vessels are compliant with the regulatory framework. Similarly, the IA should also consider how the proposal may affect insurers of autonomous vessels. The IA should identify the potential direct costs of the proposal on the regulator and insurers. The IA should consider the market significance of UK flagged vessels operating solely in UK waters and those which also partially or fully use non-UK and/or international waters. In addition, the IA should clarify the impact of the proposal on non-UK flagged vessels and whether these vessels can operate in UK waters. In contrast, the IA should also explain whether UK flagged vessels will still need to go through the exemptions process to use international waters.

#### Evidence and data

The IA primarily draws upon evidence from the MARLab report to inform the cost benefit analysis. The MARLab undertook a review of the regulatory landscape for MASS including over 40 interviews with MASS related organisations across industry, academics and Government.

The IA explains that it has used the consultation process to test and potentially improve the evidence base on MASS. Although the IA notes that there was general support from stakeholders on the impacts identified, the Department were unable to gather further evidence to support the assumptions made due to the nascency of the market and stage of policy development. The RPC welcomes the Department's plan to improve the evidence base and to quantify these impacts in future impact assessments.

#### Uncertainty, risks, and assumptions

The IA includes a discussion of potential risks and unintended consequences of the preferred option, including the risk of misalignment with international regulation, particularly the danger of implementing more rigorous requirements than the IMO later introduces, and potential supply chain issues. The IA would be improved by including a more detailed discussion of the risks and how these could be mitigated. In addition, the IA notes that the MARLab report focuses on smaller ships (under 24 metres) operating in the UK. The IA would also be improved by discussing the potential risks of this and considering how the proposal's impacts may differ for larger ships that may use different technologies. The IA would also be improved by discussing what the course of action will be if there are any significant misalignments with IMO's approach and what the implications may be.

## Wider impacts

The IA covers a good range of wider impacts, including assessment of innovation, competition, equalities, health, and justice. The IA could consider potential multi-modal competition effects. For example, an increased uptake of MASS might make transportation costs for shipping model lower or more reliable. The shipping mode could then take market share in freight from other modes such as aviation, rail or road. The IA includes a reference to an equality IA produced by the Department which assesses whether the proposal may disproportionately impact people who share a protected characteristic. The IA could be strengthened by including the equalities assessment in an annex.

The IA does not include an assessment of the impact on safety. It would be improved by explaining how the measures are expected to affect safety, and whether autonomous vessels would pose new risks and clarifying the risks of not implementing the proposed legislative changes.

The IA could be improved by considering environmental impacts of the proposal, for example, whether there are any anticipated emission savings, water pollution, impacts on marine life and protected coastal zones. The potential trade effects of the proposal could also be explored in terms of the extent to which there could be a shift in the freight volumes and values from other modes such as aviation. The IA should also consider the impact of the proposal on the UK ship building industry.

In addition, the IA would be improved by discussing how the proposal could potentially interact with the IMO's new regulatory instrument expected in 2028, including any available details on the IMO's plan, the potential risks, and the possible steps to mitigate any legislative misalignment.

## Monitoring and evaluation plan

The IA includes a brief monitoring and evaluation (M&E) plan for the proposal on pages 51-54, which sets out the key objectives of the proposal in a SMART format. The Department also proposes to develop a more detailed M&E plan at the secondary legislation stage. While the RPC acknowledges that there are some uncertainties around the content of the secondary legislation, the IA should include some initial discussion of what success criteria could form the basis for assessing whether the policy has met its objectives.

In addition, the M&E plan would be strengthened by setting out the timeframe for evaluation, the key success metrics, data to be collected (e.g. safety and accident data), data collection methods and evaluation techniques. The IA should also consider how rapid changes in technology and innovation in the MASS market would be factored into the M&E plan.



## **Regulatory Policy Committee**

For further information, please contact [regulatoryenquiries@rpc.gov.uk](mailto:regulatoryenquiries@rpc.gov.uk). Follow us on Twitter [@RPC\\_Gov\\_UK](https://twitter.com/RPC_Gov_UK), [LinkedIn](#) or consult our website [www.gov.uk/rpc](http://www.gov.uk/rpc). To keep informed and hear our views on live regulatory issues, subscribe to our [blog](#).