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IMPACT ASSESSMENT REPORT

Accompanying the document

Proposal for a Directive of the European Parliament and of the Council

amending Directive 2009/21/EC on compliance with flag State requirements

{COM(2023) 272 final} - {SEC(2023) 210 final} - {SWD(2023) 166 final}

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Glossary

Term or acronym	Meaning or definition
AID	Accident Investigation Directive (Directive 2009/18/EC establishing the fundamental principles governing the investigation of accidents in the maritime transport sector)
Cross-trades	Ships sailing under an EU member State flag but never (or seldom) calling at an EU Member State port, instead sailing between third country ports in other parts of the world
EMSA	European Maritime Safety Agency
FS	Flag State
FSI	Flag State Inspection – (Complementary) Inspection, not statutory survey, by the flag State not leading to certification.
FSD	Flag State Directive (Directive 2009/21/EC on compliance with flag State requirements)
(IMO) GISIS	Global Integrated Shipping Information System
III-Code	IMO Instruments Implementation Code
IMO	International Maritime Organisation
IMSAS	IMO Member State Audit Scheme
PMoU	Paris Memorandum of Understanding
PSC	Port State Control
PSCO	Port State Control Officer
PSC Directive	Port State Control Directive (Directive 2009/16/EC on port State control)
QMS	Quality Management System
Statutory Survey	Survey of ship by the flagged ship by a flag State surveyor, or a Recognised Organisation surveyor acting on behalf of the flag. Survey leading to certification.
THETIS	Port State control database (hosted in EMSA)
RO	Recognised Organisation

1. INTRODUCTION: POLITICAL AND LEGAL CONTEXT

This Impact Assessment accompanies a legislative proposal for a revision of **Directive 2009/21/EC on compliance with flag State requirements** (hereinafter "FSD" or "FS Directive")[1]. The Directive aims at ensuring that ships flying EU Member States flags meet all safety[2] and pollution prevention requirements and are fit for service[3] and that EU Member States correctly, effectively and consistently discharge their obligations as flag Sates[4]

Maritime transport is a key sector for the EU economy as it embodies the main transport mode for European imports and exports to the rest of the world. Maritime transport is estimated[5] to represent around 80% of worldwide goods transported (deep sea shipping) and around 30% of intra-EU transport activity (short sea shipping). In 2019, 1.9 billion tonnes were transported by short sea shipping to/from the main EU ports. In addition, 418 million passengers embarked and disembarked ferries and cruise vessels in EU ports in 2019. Maritime transport fulfils an important strategic role in safeguarding trade, as demonstrated during the COVID-19 pandemic, as well as connectivity of islands, peripheral and remote maritime regions[6].

At the same time, an average of 2,239 marine accidents and incidents were reported per year between 2014 and 2020 for EU Member States (MS), of which 1,397 marine accidents involving EU Member State flagged vessels. In addition, 370 cases of marine pollution have been reported in total during 2014-2020, of which 216 involving EU Member State flagged vessels[7].

While shipowners based in EU Member States control around 34% of the world's commercial fleet in terms of ownership[8], the fleet flagged[9] in EU Member States has remained relatively constant at around 14% of the world fleet, over the past 7 years. Six EU Member States flags[10] account for around 71% of the total EU Member State flagged fleet.

The Sustainable and Smart Mobility Strategy[11] (SSMS), adopted in December 2020, announced that the Commission was planning to initiate a review of existing legislation on **flag State responsibilities, port State control and maritime accident investigation**. According to the SSMS, the overall objective of this review should be to enable safe, secure and efficient maritime transport and further stresses that "*safety and security*

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009L0021
[2] When 'safety' is referred to in this report, this generally includes safety, security and pollution prevention.
[3] Have all relevant certificates issued by the flag State for the type of ships.
[4] The 'flag State' of a vessel is the jurisdiction under whose laws the vessel is registered, it is the nationality of the vessel.
[5] European Commission, The EU Blue Economy Report 2022.
[6] EU Transport in figures, the Statistical Pocketbook 2022, https://ec.europa.eu/transport/media/media-corner/publications_en
[7] http://www.emsa.europa.eu/newsroom/latest-news/item/4266-annual-overview-of-marine-casualties-and-incidents-2020.html
[8] The flagged fleet refers to vessels sailing under any of the EU MS flags, while the owned fleet to vessels owned by EU companies independently of the flag (EU or non-EU). Source: Statistical pocketbook 2022 (europa.eu)
[9] See Annex 5 for an overview of the EU/EEA flagged fleet in terms of number of ships. These cover seagoing propelled merchant ships, but excluding the following: dredgers, mooring vessels, pilot vessels, salvage ships, standby safety vessels, accommodation ships, patrol vessels, ice-breakers, effluent carriers, floating production storage and offloading installations, production testing vessels, tank cleaning vessels, offshore construction vessels, fish carriers, firefighting vessels, fishing vessels, fishing patrol vessels, trawlers and barges.
[10] In the following order in terms of number of ships in 2021: Malta (23%), Greece (11%), Cyprus (10%), Netherlands (9%), Portugal (9%) and Italy (8%).
[11] COM(2020) 789 final - Sustainable and Smart Mobility Strategy – putting European transport on track for the future.

of the transport system is paramount and should never be compromised and the EU should remain a world leader in this field. Continuous efforts with international, national and local authorities, stakeholders, and citizens is key[…][12]*."* The Strategy sets as one of the milestones that by 2050, the death toll for all modes of transport in the EU should be close to zero. The EU policy must secure competitive maritime transport and a high-quality EU Member State flagged and controlled fleet, ensuring that such services take place at a minimal level of risk for crews, passengers, cargo, vessels, the marine environment and coastal activities. This has also been underlined in several Council conclusions, in particular those of 2017[13] and of 2020[14].

In relation to the protection of the marine environment, the initiative indirectly contributes towards delivering the zero pollution ambitions of the European Green Deal[15], in particular preventing pollution to water (e.g. oil spills). It also indirectly contributes towards Sustainable Development Goal (SDG) 3 ("Ensure healthy lives and promote well-being for all at all ages") and SDG 14 ("Conserve and sustainably use the oceans, seas and marine resources for sustainable development").

International context

As shipping is fundamentally global, maritime safety and marine environmental protection are regulated through a complex **international legal framework**. The **United Nations Convention on the Law of the Sea** (UNCLOS)[16] is the international framework for all marine and maritime activities and covers ocean governance, the use of the oceans and the seabed, including maritime transport, in a broad sense. It is the basis for the formulation of detailed international rules and standards for the design, equipment, operation, management, maintenance, manning and disposal of ships. This is done at international level by the **International Maritime Organisation (IMO)**[17]**.** UNCLOS stipulates that a ship can fly only one flag of a State and is subject to the exclusive jurisdiction of that flag State which is responsible for its conduct and its compliance with safety and environmental protection requirements.

IMO conventions are binding on all signatory parties once they enter into force. The main international safety and pollution prevention conventions are known by their acronyms SOLAS, MARPOL, LL, COLREG, and STCW[18] to which all EU Member States (MS) are parties. The compliance with these conventions ensures that the competitive international maritime transport market is kept level. Shipowners and operators may seek to reduce their costs by not complying with the relevant conventions and, therefore, gain competitive advantage over ship owners which meet the necessary standards. Such 'substandard' ships usually choose to

[12] Idem FLAGSHIP 10 – ENHANCING TRANSPORT SAFETY AND SECURITY point 98 and 101.
[13] "Priorities for the EU's maritime transport policy until 2020: Competitiveness, Decarbonisation, Digitalisation to ensure global connectivity, an efficient internal market and a world-class maritime cluster"
[14] Council Conclusions on "EU Waterborne Transport Sector – Future outlook: Towards a carbon-neutral, zero accidents, automated and competitive EU Waterborne Transport Sector", 5 June 2020
[15] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en#documents
[16] UNCLOS was signed in 1982. The European Union ratified in 1984.
https://www.un.org/Depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm
[17] While the jurisdiction and enforcement on board is that of the nation flag, the development of the rules and regulations are done at international level by the International Maritime Organization (www.imo.org). IMO is a United Nations specialised agency; all EU Member States are IMO members. The European Union is not a member but the Commission holds observer status as an Intergovernmental Organisation (IGO) among many other such.
[18] International Convention for the Safety of Life at Sea (SOLAS 74), International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), International Convention on Load Lines (LL 66), Convention on the International Regulations for Preventing Collisions at Sea (COLREG 72), Standards of Training, Certification and Watchkeeping (STCW).

fly the flag of States which do not, or do not adequately enforce international safety and pollution prevention standards on vessels flying their flag.

To counter this, the IMO put in place the "IMO Instruments Implementation code" (III-Code) and the IMO audit to ensure that States, as parties to the above-mentioned safety and pollution prevention Conventions, take all necessary steps to correctly implement them. The III-Code covers flag State responsibilities (as well as port and costal State) and is designed to ensure that national authorities have the resources and powers needed as a flag State to assume their international obligations and ensure compliance of their flagged ships with these rules. When the III-Code entered into force in 2016, the IMO audit scheme, up till then voluntary, became mandatory for all IMO parties, including EU Member States. The IMO audit scheme requires IMO parties to undergo an audit every 7 years. During these audits it is verified that all IMO States with a register implement the III-Code and relevant conventions.

EU context

EU action in the field of maritime safety both complements and implements the international rules and regulations as defined within IMO. The transposition of IMO rules into the EU legal system makes these legal provisions actionable before the European Court of Justice, thereby ensuring their uniform enforcement across the Union (the IMO lacks any legal enforcement powers). The bulk of today's EU maritime safety policy was developed in the early 1990s, and was further worked upon between 2000-2009, in the wake of major maritime accidents causing substantial oil spills[19] and loss of life[20]. The overall objective of the EU was – and continues to be – a Union policy on *safe seas*[21], and continuous work towards improving safety and thereby reducing accidents and pollution into the sea.

The Directive has the two-fold purpose of enforcing safety rules and preventing pollution as well as making sure that Member States comply with their obligations as flag States. The Directive includes rules aiming at a certain harmonisation for cases when a ship changes flag and when a ship (under a Member State flag) has been detained following a port State control inspection, and it sets forth the requirement for all EU Member States to undergo an IMO audit. The Directive also goes over and above what is required at international level by requiring Member States to have and maintain an internationally certified quality management system (QMS) for their flag-State related activities. Furthermore, it contains links to a performance measurement of the flagged fleet under the Paris Memorandum of Understanding (MoU) on port State control[22], which is in turn incorporated into EU law though the port State control Directive[23].

It is for each EU Member State as flag State to take all necessary measures, including on board inspection and/or survey, to establish that the ship meets all international rules and regulations, as well as regional and/or national rules and regulations as the case may be, before issuing the relevant ship certificates, or have them issued on their behalf, as proof of the ship's safety and that the ship is fit to proceed to sea. Such rules and regulations relate to safety construction, machinery, stability, and collision avoidance, as well as pollution prevention as laid down in the international conventions to which the State is a contracting party. The surveys

[19] E.g. Aegean Sea in 1992, Spain (74,000 tonnes hydrocarbon), Braer accident in 1993, UK (85,000 tonnes), etc.
[20] E.g. MV Estonia which sank in the Baltic Sea in 1994 claiming 852 lives.
[21] COM (93) 66, Communication from the Commission on 'A common policy on safe seas'.
[22] Paris Memorandum of Understanding on port State control is an administrative arrangement, whose 27 members (22 EU Member States with seaports, Iceland, Norway, the UK, Canada and the Russian Federation) carry out harmonised inspections and share port State control data.
[23] Directive 2009/16/EC

and certificates are therefore referred to as statutory[24]. It is for the shipowner to make the ship available for all surveys and inspections, and by carrying out all necessary upgrades and repairs, to maintain and have updated all statutory certificates which are a prerequisite for the ship to be able to sail[25].

The international regime, as implemented also in the EU maritime safety acquis, allows a flag State to delegate the technical work to classification societies (non-governmental organisations that establish and maintain technical standards for the construction and operation of ships) to perform these statutory surveys required for verification that the ship is fit for purpose, on their behalf. When a classification society acts in this way it becomes a Recognised Organisation (RO) for that flag State. The flag State may also allow the RO to issue certificates on its behalf. However, the responsibility incumbent on the flag State cannot be delegated. There is no obligation to use ROs; it is a choice that any flag State makes depending on the size and type of its fleet and on its own resources. Currently almost all EU Member States as flag States have chosen to use ROs[26] for various technical work. This is permitted and regulated under EU law[27] and the Commission has listed[28] the classification societies the Member States may choose from.

As the flag State's responsibilities cannot be delegated away, there is a need, *de jure* and *de facto*, for flag States to continue to inspect its flagged vessels and monitor the statutory work performed on their behalf by ROs. Currently, each flag State has discretion on the scope of flag State inspections, called supplementary inspections[29], but not on statutory surveys, leading to certification. This is a fundamental safety aspect that requires technical resources with adequate expertise, and forming a core part of any maritime administration. The underlying international assumption is that all flag States have resources and meet requirements incumbent on them. This however is not always the reality, as also shown by the IMO Audit findings[30]. When a flag State does not allocate the resources needed for inspections, it not only creates a competitive advantage for its flagged fleet but also it increases safety and environmental risks.

Digitalisation and exchange of information

Since the Directive was adopted in 2009, there have been technological advancements in particular related to ***digitalisation***. The Council Conclusions of 2020[31] acknowledged this and underlined, for future initiatives, the need to "*[…] through possible relevant legislative amendments, the uptake of digital services, electronic certificates for the registration of seagoing ships under EU Member States flags, the electronic verification of certificates for seagoing ships and seafarers as an option in the context of port State control procedures […]"*. This also reflects the Commission's twin overarching political objectives of sustainability and digitalisation.

Some initiatives have been taken for the exchange of information between EU Member States and with relevant systems, including EU-wide systems hosted in the European Maritime Safety Agency[32] (EMSA),

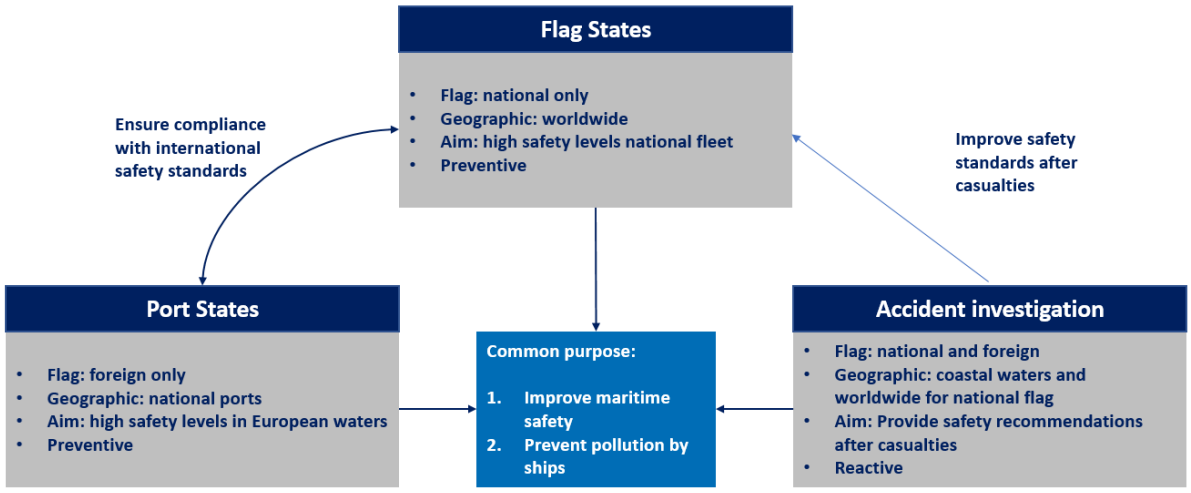
[24] As required by the Harmonised System for Survey and Certification (HSSC, IMO Resolution A.1140(31), 2019)
[25] It is only with such statutory safety certificates that the ship can get insurance; without insurance the ship can normally not sail.
[26] See Annex 10 on the flag States delegations to the ROs.
[27] Regulation (EC) No 391/2009 and Directive 2009/15/EC
[28] Published in the Official Journal – OJ C 466, 7.12.2022, p. 24–24
[29] There are two main types of flag State work/control on board flagged ships: (1) Statutory survey leading to certification and, (2) flag State inspection not leading to certification. Flag State inspections are only to be carried out by the flag State.
[30] See Annex 8
[31] Council Conclusions on EU Waterborne Transport Sector, 5 June 2020
[32] EMSA is established by Regulation (EC) No 1406/2002

both as regards sharing e-reports following port State control inspections, inspection of roll-on, roll-off passenger ships, and as regards some details of statutory certificates when issued by an RO listed by the EU. However, the lack of means for efficient exchange of statutory certificates became very visible during the COVID-19 pandemic as there were no uniform or effective means to e.g. electronically check, facilitate temporary extension of relevant certificates, control certificates and even allow for partial remote surveys.

Synergies with other EU policy instruments[33]

The responsibility for maritime safety involves three lines of State intervention both internationally and at EU level (see Figure 1). States have differing but complementary responsibilities either as a vessel's state of registration, a state which is being visited by a foreign flagged vessel or as a coastal state by which a vessel is travelling without calling. The *first "line of defence"* is provided by the flag State. However, as flag State rules only apply to vessels that fly that flag, and as some flags are not willing or able to police their fleets many of the IMO's most important technical conventions contain provisions for ships to be inspected when the vessels visit foreign ports to ensure that they meet the international requirements. This control by port States is regarded as the *second "line of defence"*.

Figure 1: The flag State, port State and accident investigation responsibilities of EU Member States



Although both the flag State control and the port State control have worked to improve maritime safety and improve the marine environment, accidents can still occur. Once this happens, it is important to investigate what went wrong and how a similar accident can be avoided in the future. To achieve this, the *third "line of defence"* of accident investigation was created.

This impact assessment has been initiated in parallel to the related impact assessments on the revision of the port State control Directive and the Accident Investigation Directive. All three EU maritime safety Directives are based on the rules and standards established by the IMO at the international level and while they each reflect the differing responsibilities of the EU Member States in their various roles as flag, port and coastal States incumbent on a State under international law, they have to be coherent with each other and any proposed change to one has to take the other two Directives and the broader international regulatory environment into account.

[33] See also Annex 14 – Other relevant EU legislation

The impact assessment of **port State control Directive** looks at extending the scope of port State control (PSC) to fishing vessels which are currently not covered and at updating the Directive to take account of changes to the international legal and regulatory framework since 2009. It seeks to address issues related to the targeting of vessels for inspection, including the use of electronic data and certificates and seeking to make PSC more vessel focused. It also looks at issues encountered by Member States' authorities in their implementation of the PSC regime. Flag State control and PSC are complementary and the central pillars of the EU maritime safety policy. If the flag State is carrying out strict control and oversight of its flagged fleet, the likelihood of ships being inspected under PSC and therefore detained after inspection is reduced. Good flag state enforcement reduces the 'burden' on PSC. In contrast to the flag State control, PSC does not control all vessels but rather targets vessels depending on their so called "risk factor". In essence, the PSC system aims to verify that vessels are certified and meet the international requirements, as attested by the statutory certificates issued by the flag State, or on its behalf by the RO. The revision of the **Accident Investigation Directive** explores how to further enhance the way accident investigations are carried out; it looks at extending the scope to smaller fishing vessels which are currently not covered. It also seeks to update the Directive to take account of changes to the international legal and regulatory framework[34] since 2009.

The need for a measured approach

The gradual building of the EU maritime safety policy (since 1993) by transposing the international rules has taken a deliberately measured approach. The reason being that, if the EU is too strict in advancing rules over and above the international regime, there is a risk that shipowners consider this to be a disadvantage and reflag their vessels to non-EU flags or indeed move their entire business out of the EU. There have however been exceptional situations when EU maritime safety rules go beyond international rules, namely when the latter are: (i) not precise enough; (ii) not being implemented quickly enough (e.g. double hull tankers[35]); or (iii) in areas where the co-legislators attach particular importance (e.g. passenger ships[36]). Hence, while it is tempting to be stricter where the international rules may not have reached the desired level, any measures at EU level must be balanced with the possible impact on the EU Member State flagged fleet and therefore strategic resilience and impacts on trade (avoiding flagging out to non-EU flags). Thus far, the EU maritime safety policy and legislation thereon have taken a measured approach.

Evaluation of the Directive

The 2018 ex-post evaluation[37] and the Maritime Transport Fitness Check[38] concluded that the added value of EU action lies in the harmonised implementation and enforcement of international rules into and under EU legislation, as well as requiring and encouraging cooperation among Member States. The evaluation demonstrated the key role that the flag State Directive plays in providing for a high and uniform level of safety and a level playing field between Member States, which in turns contributes to achieving safe, secure and sustainable maritime transport.

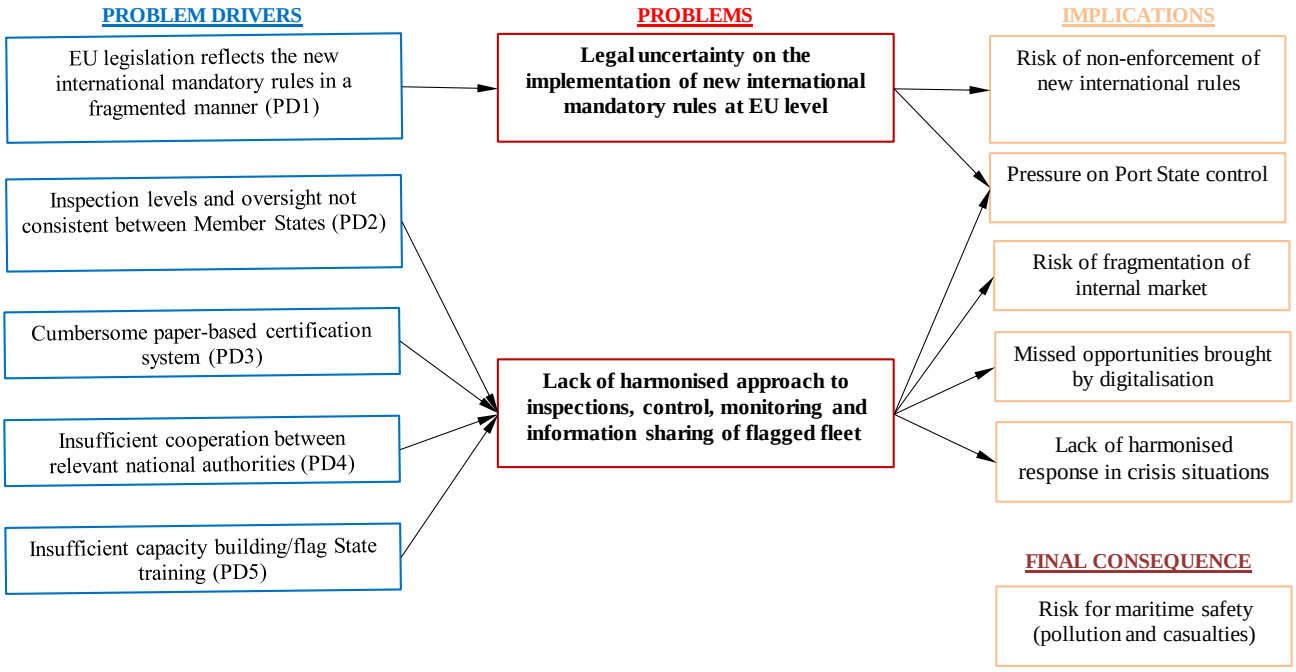
[34] The Accident Investigation Directive (AID) is relevant as internationally accident investigation is falling within the sphere of flag State tasks. It is therefore included in the III-Code, but the EU maritime safety legislation goes further than the international rules and while based on them, include the requirement that such accident investigation bodies are independent (also from flag State administrations).
[35] An oil tank ship with double bottom and double side hulls.
[36] Given its many islands the passenger ship and roll-on, roll-off passenger ships segment is big in the EU and the safety level is expected by an EU citizen to be the same wherever they board a passenger ship.
[37] SWD (2018) 232 final
[38] SWD (2018) 228 final

The Fitness Check however highlighted the need for a broader rebalancing of EU maritime safety policy. This means above all reinforcing the EU layer for the "first line of defence", compliance and preventive action which befalls on flag States. The evaluation concluded that current policies focus on Member States as port and coastal States, and less so on flag States. The Fitness Check concluded that what is missing within the FSD are the flag State relevant parts of the mandatory III-Code. The results of the ex-post evaluation are reflected in this impact assessment as summarised in Annex 7.

2. PROBLEM DEFINITION

The underlying problems, problem drivers and implications that are relevant for the revision of the Directive are presented in Figure 2.

Figure 2: Problem tree



2.1. What are the problems?

The responsibility for compliance with maritime safety standards lies, as a preventive action, in the first instance, with the flag State. The duty of the flag State is to enforce standards by a regime of regular surveys and certification. A port State may require ships registered with other flag States to rectify deficiencies revealed during PSC inspections and may even detain ships in port if necessary, but port State controls do not substitute for flag State inspections since the responsibility for substandard ships remains with the shipowner, under the control of its flag State. Finally, accident investigations by establishing the root cause in order to prevent future accidents of a similar nature.

It is difficult to directly link individual parts of the safety chain of the different *'lines of defence'* to quantifiable improvements in safety and environmental protection. However what can be seen is that over the last decade the average deficiency and detention rates for ships calling to EU ports and subject to port State control has diminished (Figure3). Similarly, there has not been a significant oil pollution incident in EU waters for over 20 years. This may be due to an overall improvement in ship quality but it is also due to the clear message conveyed to shipowners that it is not worth the risk to operate substandard shipping in EU

waters. The result is an indication that the EU and its Member States attaches great importance to maritime safety and enforcement of the rules agreed upon at IMO.

That absence of quantifiable improvements is however not evidence that there is not a problem and there is no room for complacency. The prerequisites to actually control and maintain compliance of ships flying the flag are monitoring and inspections. There is no way around it. Flag State inspections needs to be performed as a complement to surveys for the dual purpose of ensuring the ship is fit and continuously reflect the certificates issued and, for monitoring directly on the sport the work performed by RO's on behalf of the flag State. A major accident can have devastating consequences.

Problem 1: Legal uncertainty on the implementation of new international mandatory rules at EU level

As explained in section 1, the IMO Instruments Implementation code (III-Code) and the IMO audit are the means to ensure that States, as parties to the Conventions, put all means in place to implement them. The III-Code covers flag State responsibilities (as well as port and costal State), including the IMO audit, and is designed to ensure that national authorities have the resources and powers needed as flag States to assume their international obligations and ensure compliance of their flagged ships with these rules.

However, the III-Code is not fully reflected in the flag State Directive and thus not all of its provisions are incorporated or fully incorporated into Union law[39] (see section 2.2 and Annex 6 for a detailed assessment). This was also pointed out in the 2018 ex-post evaluation (see Annex 7). Therefore, EU Member States as flag States are faced with a fragmented set of rules, resulting in legal uncertainty on the implementation of new international mandatory rules at EU level and a risk of non-enforcement. Unilateral action by Member States would deprive the Directive of its coordinating and harmonising effect, leading to distortions in the internal market. In principle, any merchant ship can sail anywhere in the world and change flag with little impediment (due to the cross-border dimension of the sector). The full benefits on maritime safety and pollution prevention in the EU (as well as internationally), can be derived only if all Member States achieve full and effective implementation of all instruments. Stakeholders consulted, both industry and public administrations - in particular the 17 EU flag State administrations interviewed during the stakeholders' consultation - agreed to the need for full alignment with the new international mandatory rules in the flag State Directive, as these are already mandatory for them.

The IMO Audit has also become mandatory under the III-Code since the adoption of the FSD, while the current corresponding provision in the FSD (Article 7) requiring Member States to undergo the then voluntary IMO audit, ceased to be applicable. However, experience with the implementation of the Directive has shown that there is a need to maintain the requirement in EU law in order to ensure applicability, uniformity and enforcement. The need to mandatorily undergo the IMO audit was repeatedly raised by the Commission with some 'reluctant' Member States (7 Member States) in the context of various fora for discussions of maritime safety issues, including in particular the Committee of Safe Seas. In the discussions in IMO on the planning and scheduling of such Audits, the Commission has also encouraged Member States to sign up as early as possible. The Commission had to initiate one formal infringement procedure against one Member State for not having accepted a date for undergoing the IMO audit in time[40]. The transposition of IMO rules into the

[39] At the time of adopting the Directive in 2009, a statement (Council Doc no - 15859/08 ADD 1) was made by the Member State "pledging" to follow the III-code (which was still being finalised at the time). Member States agreed to be bound by international conventions imposing obligations on flag States and to apply the IMO code on the implementation of its mandatory instruments, designed to ensure that national authorities have the resources and powers needed as a flag State to assume their international obligations, before incorporating under EU-law.

[40] This case was closed at the stage of letter of formal notice.

EU legal system makes these legal provisions actionable before the European Court of Justice, thereby ensuring their uniform enforcement across the Union. As illustrated by the case referred to, there is a need to keep this requirement mandatory under EU law so that indeed it can be enforced when necessary. If an EU Member State as flag State does not undergo the audit, although now mandatory under the IMO rules, nothing really happens as IMO has no enforcement powers.

Furthermore, the IMO Audit procedures do not require the audited State to make the results (i.e. the audit report and/or corrective actions) available to its peers or to the public. The experience of the Commission with the implementation of the Directive has shown that there is a need to maintain also that requirement in EU law in order to ensure applicability, uniformity and enforcement as well as a certain transparency as regards the need to make audit reports (including corrective action(s)) available to "peers", showing the commitment to continuous improvement and quality shipping. Like most audit work, the IMO audit forms part of preventive actions, and for some EU flag States, while not required, this is publicly used as a sign of quality to attract quality minded owners. As transparency is a very important tool in maritime safety, this forms part of the reasons for maintaining the mandatory requirements in the flag State Directive.

In the consultations, in particular the consultation meeting organised in November 2021 with all EU Member States Maritime Directors and at the stakeholders' workshop organised in January 2022, all agreed that there is incoherence between the now mandatory IMO audit and the sunset clause in the Directive (Article 7). Neither Member States nor industry representatives questioned the need to fully incorporate and align with the III-Code and to retain the reference to and the requirement for undergoing the IMO Audit. EMSA assists the Commission in its tasks, as guardian of the Treaties, to monitor the implementation of the maritime safety acquis by the EU Member States, and for this purpose organises visits to the Member States under an agreed visits programme. However, there is a problem where those visits and the IMO audit are not synchronised potentially leading to conflicting findings and therefore risk of legal uncertainty for the auditee Member State. So far, only 3 EU Member States have invited the participation of the Commission/EMSA during an IMO audit.

As the FS Directive implement the international rules agreed by the same EU Member States as flag States in IMO, there is a need to avoid:

- non-complementarity between the visits to Member States and the IMO Audits;
- duplication of areas for visits/audits and thereby also missing opportunities for efficiency and focus of both visits/audits;
- a potential situation of conflicting findings for the audited State, causing confusion and thereby legal uncertainly as that State risks not knowing what to do to take corrective action to satisfy the IMO audit and at the same time be in compliance with the EU legislation;
- that either IMO or EU are not fully aware of the audit report and/or corrective actions.

A synchronised approach[41] in addition has the potential to further improve the analysis identifying areas for further improvement, as part of the preventive action both in IMO and in the EU.

In the consultations, only one Member State raised concerns and could not see the added value for the flag State.

[41] This has been informally discussed with the IMO Staff carrying out audits.

Problem 2: Lack of harmonised approach to inspections, control, monitoring and information sharing of flagged fleet

The second problem relates to the discrepancies in the approach to inspections, control, monitoring and information sharing of flagged fleet among different States. EU action in the field of maritime safety both complements and implements the international framework as defined within IMO. However, certain aspects in the IMO III-Code are either not specific enough and/or leaving too much room for discretion for Member States application. In addition, insufficient technical and operational capacity has negative consequences regarding the operational capability to perform flag State inspections and monitoring of the work of ROs performed on behalf of the flag State, in a harmonised way across the EU.

The analysis and conclusions of IMO audits performed (see Annex 8), both under the voluntary and mandatory schemes, revealed that among the most frequent factors contributing to the lack of effective implementation of international instruments are: insufficient human and financial resources; lack of technical capability (trained personnel, hardware/equipment); lack of management system; and, insufficient capacity to have a purposeful monitoring/oversight over fleet and ROs. While these findings cover more States than the EU Member States, they are indicative of the more generally observed issues with the III-Code and therefore also indicative of areas where certain level of harmonisation at EU level is needed.

During the consultation process, the stakeholders' interviews have confirmed that inadequate technical and operational capacity is a significant issue when it comes to the adequate implementation of international and EU legislation and monitoring of ROs. Additionally and directly linked to this, the capability and availability of relevant technical staff as well as their training and capacity building is a consequent key issue for EU flag States, as also acknowledged during the stakeholders' consultation. The level of training and capacity building for flag State inspectors, once they have qualified according to their national education schemes, is an important factor affecting their performance.

Furthermore, the III-Code includes requirements on the individual flags to measure their performance[42], but it is not specific, only giving a non-exhaustive list of example areas. The individual performance measurement of the flag States vary. The current measurement of performance of flags in the EU[43] is based on the publicly available Paris MoU White/Grey/Black lists[44]. If a flag State has good control of its fleet (via inspections and monitoring) the vessels flying its flag are likely to have less detentions. Figure 3 shows the trend for each Member State between 2012 and 2020, where the lower the ranking number of a Member State, the better its performance is.

Where EU Member States as flag States fall into the Paris MoU Grey or Black[45] lists they are required to make an analysis of the main reasons for the lack of compliance and to take corrective action, informing the Commission of the steps taken. However, this single criterion can only offer a 'sample' of the situation and is today not sufficiently refined, because: (1) following a decision in the Paris MoU the method used to calculate

[42] Part 2 point 42 and 43 – '…evaluate its performance with respect to the implementation of administrative processes, procedures and resources necessary to meet its obligations…'.

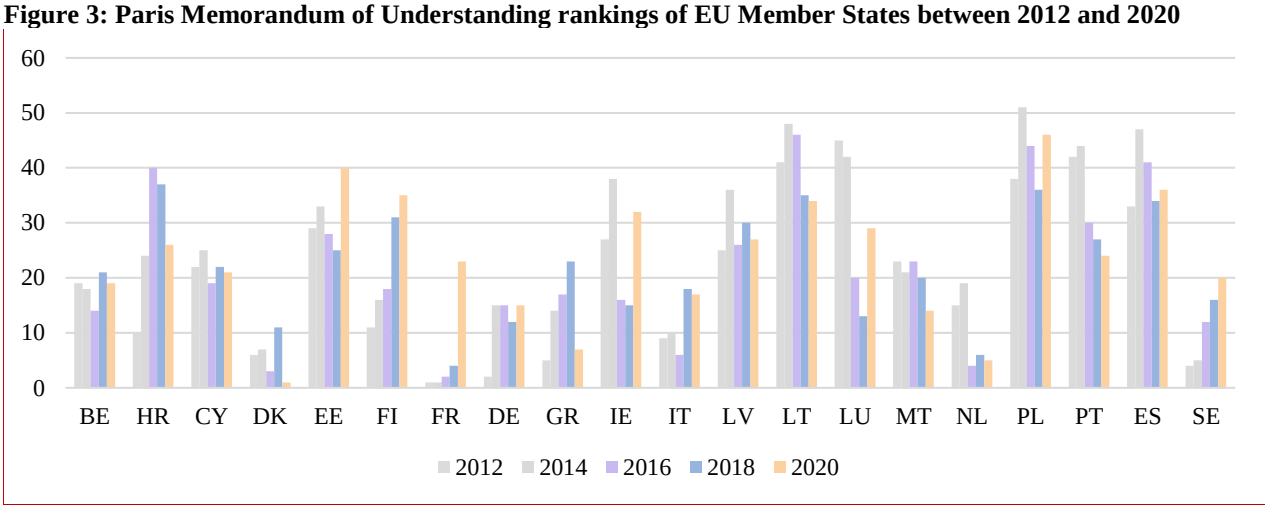
[43] The requirement in the Directive regarding the measurement of flag State fleet performance is provided in Article 8(2). This is a requirement which has been in force since 2009.

[44] Source: https://www.parismou.org/detentions-banning/white-grey-and-black-list. White listing means overall good performance of the flagged fleet. Grey listing means attention is needed to improve. Black listing means poor performance and risky (in terms of safety) ships.

[45] For 2021 there was one MS on the Grey list and none on the Black list of the Paris MoU https://www.parismou.org/detentions-banning/white-grey-and-black-list

the flag lists is changing (to take better account of the sample size); and (2) it only looks at the flagged fleet performance and does not include any performance criteria related to the flag State administrations. This single and somewhat 'blunt' performance criterion also only looks at ex-post non-compliance, rather than being pro-active and based on risk-assessment/profiling and only for one PSC area, the Paris MoU, among several in the world. It is also not aligned with the more elaborated performance criteria suggested in the III-Code. Furthermore, the current framework does not sufficiently support the administrations in identifying weaknesses in their control and monitoring systems, including to determine whether staffing, resources and procedures are adequate to meet their flag State obligations. Consequently, a sound maritime safety, security and pollution prevention culture is not sufficiently promoted or rewarded. In the stakeholders' targeted consultation[46] it was confirmed that this is indeed an issue and that, while detentions of ships under PSC should be retained as a criterion, it should not be the only one.

Figure 3: Paris Memorandum of Understanding rankings of EU Member States between 2012 and 2020



Source: VVA, WMU and Admaris (2023), Impact assessment support study; Note: The vertical axis indicates the number of PSC detentions

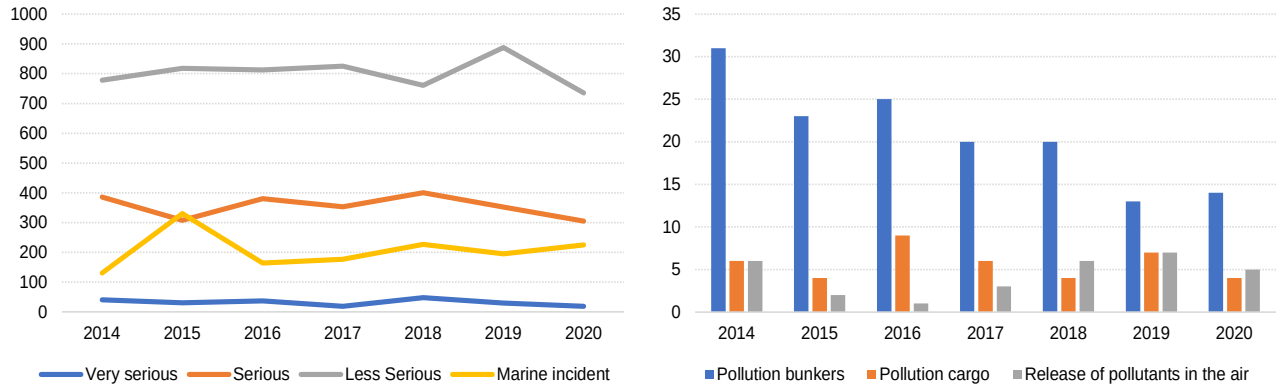
The final consequence of the problems discussed above relates to risks for maritime safety (pollution and casualties). This should however be seen in the broader context of the flag State, PSC and accident investigation responsibilities for ensuring maritime safety and the protection of the marine environment.

During 2014-2020, an average of 2,239 marine casualties and incidents were reported per year for EU flagged and non-EU flagged vessels. For EU flagged vessels, 1,397 marine casualties and incidents were reported per year on average (around 62% of the total), showing a relatively stable evolution over time (see Figure 4, left-hand side). Very serious[47] and serious casualties[48] together represented around 17% of the marine casualties and incidents, resulting in an average of 23 fatalities and 143 injuries per year[49]. A total of 370 cases of marine pollution have been reported during 2014-2020 for EU flagged and non-EU flagged vessels, of which 216 cases involved EU flagged vessels. Marine pollution in the form of ship bunkers (fuel) and other

[46] Dedicated Stakeholders' workshop with Member States and industry, organised on 21 October 2021.
[47] As defined by the IMO Code for the Investigation of Marine Casualties and Incidents – in effect loss of a ship, death or severe damage to environment - referred to in Article 3(2)(b) of Directive 2009/18/EC on maritime accident investigation.
[48] As defined by the IMO – in effect a fire, explosion, collision, grounding, contact, heavy weather damage, ice damage, hull cracking, or suspected hull defect, etc. referred to in Article 3(3) of Directive 2009/8/EC on maritime accident investigation
[49] European Maritime Safety Agency (2021), Annual overview of marine casualties and incidents 2021. EU flags only.

pollutants (e.g. cargo residues, lubricating or hydraulic oils) represented 68% and 19%, respectively, of the total number of cases of pollution for EU flagged vessels (Figure 4, right-hand side)[50].

Figure 4: Number of reported marine casualties and incidents by type (left-hand side) and cases of marine pollution by type (right-hand side) for EU flagged vessels



Source: European Maritime Safety Agency (2021)

2.2. What are the problem drivers?

Problem Driver 1 – EU legislation reflects the new international mandatory rules in a fragmented manner

This problem driver relates to problem 1. Current EU legislation reflects the new international mandatory rules in a fragmented manner. Since Directive 2009/21/EC entered into force, the international environment has changed. In 2013, at the time of the IMO adopting the III-Code, the Council on a proposal of the Commission adopted Council Decision 2013/268/EU[51] setting out the Union position that had to be followed by Member States in IMO. This means that the III-Code is considered to be part of Union law[52]. Following Council Decision 2013/268/EU, EU Member States as IMO members and contracting parties to the IMO instruments are required to "*use the provisions of the III-Code for implementation in the execution of their obligations and responsibilities*" and are "*subject to periodic audits by the IMO in accordance with the III-Code to verify compliance with and implementation*".

The IMO III-Code entered into force worldwide and therefore became mandatory on 1 January 2016, but the relevant parts for flag States of the Code are not fully reflected in the flag State Directive. Parts 1 and 2 of the III-Code are particularly relevant for the flag States. Some sections of parts 1 and 2 are already covered in full (i.e. records, improvement, delegation of authority, flag State investigations) or in part by EU legislation (e.g. objectives, improvement, implementation) and others need to be introduced (i.e. enforcement, flag State surveyors). Parts 3 and 4 of the III-Code are covered in EU legislation via the VTMIS Directive[53] and the port State control Directive. In addition, the IMO code for Recognised Organizations (RO code) is also relevant

[50] European Maritime Safety Agency (2021), Annual overview of marine casualties and incidents 2021.
[51] OJ l. 155/3, 7.6.2013, Council Decision of 13 May 2013 on the position to be taken on behalf of the European Union within the International maritime Organisation (IMO) with regard to the adoption of certain Codes and related amendments to certain conventions and protocols.
[52] As soon as the Union has adopted acts, like decisions under article 218(9) TFEU backing them, they become part of the Union acquis.
[53] Directive 2002/59/EC

for Recognised Organizations (RO code) is also relevant for flag State and has been incorporated into EU law through an Implementing Regulation and Directive[54] in order to avoid conflict between EU rules and mandatory international rules[55]. While the Implementing Regulation and Directive ensure furtherance of the IMO RO code, they also cover certain parts of the III-Code. This illustrates that the III-Code is already partially incorporated into EU law but shows at the same time the fragmented manner in which the international rules are reflected in EU law, leading to legal uncertainty. Annex 6 provides a detailed assessment of how the III-Code is already reflected in EU legislation.

During stakeholders' consultation, as explained in section 2.1, the industry and the EU Member States (17 EU flag State administrations interviewed) agreed with the need for full alignment of the flag State Directive to the new international mandatory rules. This was also confirmed in a stakeholder workshop organised in January 2022.

Problem Driver 2 - Inspection levels and oversight not consistent between Member States

This problem driver relates to problem 2. Flag State requirements concern all necessary inspections, surveys[56], audits and checks of any ship that wishes to enter an EU Member State register of ships and fly its flag. A survey of the ship - whether a newly built or ship in operation - is a pre-requisite to ensure the ship is fit for purpose and meets all statutory international conventions, as well as possible relevant national and/or EU requirements. This survey, if positive, results in the flag State issuing the relevant certificates for the ship in question. That in turn enables the ship to acquire an insurance and to start sailing.

There is no homogeneity among Member States in the organisational setup of their flag State administrations. Some Member States have flag State responsibilities executed by a coast guard, normally forming part of a military (navy) or police structure. Others follow different approaches, retaining a minimum flag State administration while outsourcing most technical work. Then, there are those administrations (e.g. IT, FR, ES) that have a setup with sufficient in-house technical staff available for flag State duties. To further complicate the picture, the organisation and setup also much depends on the size and type of fleet flying the respective flag which ranges from just a few dozen to close to 1,900 vessels.

Almost all Member States have to some extent or in full delegated the statutory survey work to ROs that may also issue the relevant statutory certificates on their behalf (see Annex 10 for an overview of the statutory work delegated away). The effect is that the retained resources within the national flag State administrations have been reduced over time. At the same time, as the responsibility cannot be delegated away, there is a need for a flag State to continue to inspect its flagged vessels and monitor the statutory work performed on their behalf by ROs. Flag States are required to have a purposeful oversight programme over their fleet by carrying out flag State inspections in accordance with the III-Code. Such oversight is ensured by undertaking inspections of ships and forms one part of the monitoring of ROs together with the other important part - that the RO acts in accordance with the bilateral agreement between the flag State and the RO e.g. national

[54] Commission Implementing Regulation No 1355/2014 and Implementing Directive 2014/111/EU amending Regulation (EC) No 391/2009 and Directive 2009/15/EC respectively (on common rules and standards for ship inspection and survey organisations and for the relevant activities of maritime administrations) and excludes from implementation by MS certain parts of the RO and III-code by means of EU law.

[55] Article 5(1) of Regulation (EC) No 2099/2002 (COSS Regulation) require Member States and the Commission to cooperate in order to define, as appropriate, a common position or approach in the common international fora with a view to reducing the risk of conflict between the maritime legislation of the Union and international instruments.

[56] See section 1 and footnote 27 for an explanation of the difference between surveys, leading to certification, and inspections, not leading to certification.

requirements. However, there is no systematic or harmonised way in the EU for sharing such relevant monitoring information or the possibility of pooling resources for an effective oversight programme. Due to the lack of technical and operational capacity, the possibility to uphold and perform the obligations and responsibilities incumbent upon them under international law in relation to their flagged fleet has become an issue for the flag State administrations.

This issue is directly supported by the inspections and assessments of classification societies by the Commission with the support of EMSA. In the context of the EU RO legislation, it has been established that one of the weak points in the EU regime is the inadequate oversight of the RO by the flag States. The assessments as well as EMSA's horizontal analysis, generally point to weaknesses in the way EU flag States purposefully monitor and control the ROs that work on their behalf. This is also one of the key findings of the analysis of a large number of IMO audits (*c.f.* Annex 8).

As pointed out above today many EU Member States have delegated technical statutory survey work to RO's (and in many cases also the issuance of statutory certificates) acting on their behalf. This shows the magnitude of the issue and the widespread problem of adequate and purposeful monitoring. As the flag State's responsibilities cannot be delegated away flag States need to inspect their flagged vessels for acquiring direct knowledge of their quality of the statutory work performed on their behalf by their ROs. This need is also inferred from follow-up reports in accordance to Article 8.2 of the FS Directive. Member States finding themselves on the Paris MoU grey list (showing a worsening flag performance) has to do a root-cause analysis and identify corrective actions for improvement of performance. In such reporting it was clearly identified as a systemic issue that the monitoring and communication with ROs was part of the worsening performance causing vessels' detentions and grey listing.

16 of the 18 Member States that provided feedback on this point during the stakeholders' consultation (Annex 2 and Figure 11), agreed on the need to introduce specific requirements for more purposeful monitoring of recognised organisations (ROs), while one Member State was neutral and one disagreed on such a need.

The feedback provided by the flag State administrations during the targeted consultation indicates that the limited technical and operational capacity poses problems both for inspections and monitoring ROs and survey work carried out on their behalf, and thus also affects their performance. Concerns about staff shortages were mostly identified for the category flag State surveyors/inspectors/auditors.

The inspection level varies among flag State administrations. Data provided by 22 Member States in the context of the impact assessment process shows that the number of inspections range from 0 to 896 among the EU Member States (for an overview see Annex 11). On average, 24.1% of EU Member States fleet was inspected in 2021. 13 flag State administrations inspected less than 24% of their flagged fleet[57], and 7 of them below 10% of their flagged fleet[58].

Controlling the flagged fleet includes the requirement of taking appropriate measures[59] to ensure the ship is fit to proceed to sea. Such measures may include an on-board flag State inspection prior to registration, as required by national legislation. Stakeholders' consultation however showed that there are differences

[57] BE (22%), DK (24%), DE (1%), EE (0%), EL (17%), FR (20%), HR (5%), IT (6%), NL (12%), PT (0%), RO (0%), FI (5%) and SE (20%).
[58] DE (1%), EE (0%), HR (5%), IT (6%), PT (0%), RO (0%), FI (5%).
[59] FSD Article 4.1 ' …*measures it deems appropriate*…'

between Member States in performing such inspections and diverging national requirements. 11 out of 17 flag State administrations that responded to this question carry out both paper certification and on-board inspections before registering a ship under their flag, while 6 solely apply paper (certificate) based inspections. This translates into an inconsistent inspection level, ultimately leading to less control and risk to safety as well as creating a possible distortion on the market. Furthermore, each flag State has discretion on the scope of inspections and on how to carry out flag State inspections not leading to certification (called supplementary inspections). The III-Code does not give any details either as to the number, timing or scope of such supplementary inspections.

There is also lack of clarity on the possibility of using technical personnel that is not directly and exclusively employed as inspector (non-exclusive inspector or similar) by the flag State administrations for inspections/technical work. These staff are not regulated as to their use, scope of work and qualifications, as they are not directly employed by flag State administrations, and not included in the training programmes or subject to reporting requirements. Currently, Malta, Cyprus and Luxembourg make use of non-exclusive inspectors[60].

Using non-exclusive inspectors can be a less expensive option. In particular, Malta and Cyprus are among the world's biggest flag States and have many ships engaged in sailing on routes between two or more non-EU ports in a different part of the world (called cross-trades) and never or seldom in the vicinity of the flag State or the Union. About 20%[61] of the EU member State flagged fleet is engaged in such trade. It is expensive for those flag States to have exclusive inspectors available all over the world or to fly personnel all over the world. It is therefore a cost saving issue to use non-exclusive inspectors on the spot, on an ad hoc basis, when required. For Luxembourg, an additional consideration is that the country is landlocked and it therefore cannot possibly have personnel in ports that can be also used for other activities (for example, as port State control officers who inspect foreign flagged ships).

The concern with the practice of using non-exclusive staff is that it is less controlled in terms of technical competencies, quality of work and reporting, in addition to the risk of conflict of interest. As the non-exclusive inspectors are not full time employees, they typically work for other entities.

An analysis of public flag performance data shows a trend for quality problems with using non-exclusive inspectors. Vessels flying Luxembourg flag are on (2022 data) the grey list of the Tokyo MoU (the regional organisation for port State control in the Asia-Pacific region), meaning they are not performing to an appropriate quality standard. The same goes for Cyprus flag – while on the white list of the Tokyo MoU, Cyprus is in the bottom end of the white list. For the Paris MoU, Luxembourg flag, while on the white list, is in the bottom end of the list. Generally, there is indication that action needs to be taken to avoid that the two flags slip further into the grey list.

This problem driver also entails a lack of systematic exchange and information sharing between flag States, and especially if non-exclusive inspectors are not required to report in the same way as exclusive surveyors, supporting the efficiency of their inspection/monitoring and oversight task as well as fostering a common understanding in how to address issues encountered in a more EU-harmonised way e.g. comparing findings

[60] Cyprus reported the use 6 non-exclusive inspectors (13% of the total number of inspectors), Malta 77 (78% of the total number of inspectors), and Luxembourg relies entirely on non-exclusive technical staff (see Annex 4, and Annex 11).
[61] Out of the 8091 currently EU flagged ships (excluding tugs, dredgers, fishing vessels and others smaller tonnage) 1477 have not called at all in EU ports in 2021 or 2022.

or deficiencies identified during flag State inspections indicating a systemic problem across ship types or fleets.

Problem Driver 3 - Cumbersome paper-based certification system

Flag States are obliged to maintain a register of ships to ensure recordkeeping and information concerning ships flying their flag (register of ships). Most registers are kept, in full or in part, in non-electronic format (paper files, certificates and registry books). This translates into paperwork, inefficiency, errors, a lack of transparency and lack of harmonisation.

The Directive does not specify in what form or standard a flag register should be kept. As such, flag registers do not meet modern (service and technological) digitalisation demands of both efficiency and transparency given IT and interoperability solutions available. Consequently, there is no uniform requirement for the sharing of (a) statutory certificates in electronic format and (b) flag State inspection reports in digital format between flag State administrations. Only six flag State administrations have implemented statutory certificates in electronic format (BE, CY, DK, DE, FI, PT) and one (MT) is in the process of implementing them. This does not enable the preparation for flag or PSC inspections in an efficient way and enhanced cooperation based on sharing information among EU maritime administrations. Consequently, the possibilities to reap benefits in terms of efficiency improvements for the flag State administrations and for shipowners/operators, but also for PSC authorities are limited. This also results in reduced capability (and delay) to respond to emergency or force majeure situations, with the COVID-19 pandemic being the most recent example.

During stakeholders' interviews, when asked whether they considered their flag State administration sufficiently digitalised, 11 administrations were neutral, 4 considered that they are not sufficiently digitalised and only 2 found their administrations to be properly digitalised.

Problem Driver 4 - Insufficient cooperation between relevant national authorities (including procedures not appropriate for crisis situations)

The insufficient cooperation between Member States authorities is linked to the fact that there is no dedicated fora at EU-level for discussing flag State issues. This type of forum already exists in the form of Member States Expert Groups, to discuss coastal and port State matters, where discussions aim at harmonised procedures and at creating a level playing field among Member States. Flag State issues have so far been discussed more on an ad hoc basis, in the context of the overall Committee of Safe Seas[62] (COSS) established to deal in a consolidated way with comitology decisions in the field of maritime safety. There is no forum discussing or encouraging exchange between flag States (and inspectors) for issues related to oversight of fleet and RO's, training needs, IMO audit preparations and results etc. There is also no systematic way of sharing relevant information.

During the COVID-19 pandemic, flag State administrations have dealt with questions related to renewal of certificates, statutory surveys, crew changes, and other flag related issues on their own (as a flag State prerogative). However, lack of harmonisation in Member States responses was evident. The lack of digital solutions enabling better information sharing and exchange between Member States further contributed to this

[62] Regulation (EC) No 2099/2002 of the European Parliament and of the Council of 5 November 2002 establishing a Committee on Safe Seas and the Prevention of Pollution from Ships (COSS) and amending the Regulations on maritime safety and the prevention of pollution from ships OJ L 324, 29.11.2002, p. 1

problem driver and showed that current procedures and information exchange is not appropriate for handling a crisis situation efficiently.

Problem Driver 5 - Insufficient capacity building/flag State training (post qualification)

While the III-Code requires that flag States ensure the training and oversight of the activities of staff involved with flag State monitoring and, should implement a documented system for qualification of personnel and for continuous updating of their knowledge, it does not specify how. This can lead to very different training and capacity building, with the risk of performing flag State inspections in a non-harmonised way[63] in the EU.

In addition, international rules are continuously developed and updated in IMO, resulting in the need for updated knowledge. Many Member States are confronted with the challenge of finding the right experts to provide training or to ensure a more common understanding and interpretation of technical aspects. During the targeted consultation, Member States emphasized the need for training inspectors (post qualification), both as an important factor affecting performance and as one of the barriers to sustainable safety. They have also pointed to difficulties at national level to arrange for such training in a way that is harmonised across the EU. At the same time, they referred to the positive experience with such training and capacity building for PSC officers since 2004, provided at Union level by EMSA. For flag State inspectors, EMSA provided the first voluntary such training in 2020.

Maritime safety is a very niche subject not widely offered at academic institutions. Developing training of flag State inspectors would require access to a large pool of wide-ranging expertise and continuous engagement with practicing professionals in the field, etc. In many cases, setting up and maintaining such training for a small team of inspectors at the national level is not cost effective.

During the stakeholders' consultation, only five Member States stated that they conduct internal training programmes. However, they encourage their flag State inspectors to participate in EMSA training and see the need for this type of capacity building to be further developed, including standardising the training of flag State inspectors (common core curricula) to ensure harmonization.

2.3. How likely is the problems to persist?

The disparity between the Directive and the more recent international rules is likely to persist, maintaining the legal uncertainty. On the one hand, as parties to the maritime international conventions, it is expected that Member States as flag States will implement the III-Code and undergo the IMO audit, as they are now mandatory. On the other hand, the fragmented and incomplete way in which the III-Code has been incorporated into EU law, will most likely lead to continued legal uncertainty and Member States implementing the III-Code requirements in a way that best suits their type and size of fleet and administration. IMO audits (conducted every 7 years) may pick up some areas for improvement, for which the flag State may then act, but there would be no real enforcement mechanism if a given Member State does not undergo the audit or chooses not to take action on the basis of the audit results.

Uneven levels of ambition as regards critical elements for carrying out duties as a flag State, such as monitoring and control including the level (scope) and number of flag State inspections of the flagged fleet, *are likely to persist without further EU level intervention*. That would be an element of risk in the ability of a

[63] The same problem was identified for officers in the early days of implementation of the PSC Directive, and was addressed through a system of continuous harmonised training.

flag State administration to perform tasks incumbent on it under international law and therefore may have negative consequences on safety. Similarly, the rules for allowing ships to operate upon granting the right to fly the flag of a MS will remain in place, but will continue to be implemented in a non-harmonised way with risks of distortion in terms of level of safety control, monitoring and oversight.

Digitalisation would likely continue at slow and sporadic pace and it would depend on priorities and availability of resources in the Member States. There would be no clear time frame for use of digital solutions by all Member States to enable digital information sharing offering efficiency gains. The possibility to use e-certificates would be available on voluntary basis and the full potential in terms of enhanced information exchange and cooperation would not be exploited, either by flag State administrations or by shipowners/operators. According to the 2022 Strategic Foresight Report[64], "enabling a greener transport sector with digital technologies" is one of the areas where the twinning of the green and digital transitions is expected to have a major effect.

In addition, while the current Directive does not include any provision on training of flag State inspectors, this may still take place in an unstructured manner, building on Member States' in-house training and their voluntary participation in training developed and provided by EMSA depending on available expertise and resources in EMSA.

More generally, competition between EU flags risks being distorted downwards towards the lowest common denominator.

It is manifestly accepted that those flag States that try to create a competitive advantage based on the lax enforcement of the rules (e.g. by not doing any or sufficient flag State inspections), rather than on quality and service, and those shipowners willing to register their ships under those flags (even if few in the EU) do so to cut costs. The consequence of such lax practices is an increased risk to maritime safety. Substandard ships can pose a number of risks to safety, including casualties and pollution incidents. The environmental consequences from an accident at sea could be disastrous for the economy and the environment of all coastal EU Member States. There are costs of complying with the relevant international maritime safety rules and shipowners operating substandard ships can potentially undercut those that meet the necessary standards, and can consequently gain a competitive advantage. Given that the market in international shipping is competitive, and shipowners and operators seek to minimise their costs, which do not reflect the full societal costs of their actions wherever they trade, specific EU regulation has been introduced. This largely builds on international rules, that are however not directly enforceable as explained in section 1. Some flag States (especially non-EU ones) do not enforce international safety and pollution prevention standards on ships on their register. Hence the need to have the 'second line of the defense'. However, lax flag State control would put additional burden on PSC, but PSC cannot substitute for flag States' responsibility and, in any case, PSC only acts ex-post (a PSC inspection or a detention can only occur when a "substandard" ship is already sailing).

Ensuring level playing field in the internal market means that there should be no situation where avoiding the internationally agreed rules is rewarded as this risks becoming the lowest common denominator. Substandard ships with "clean" certificates compete unfairly with those ships who actually meet all safety rules but are faced with higher costs due to better safety standards. There are such temptations as evidenced by a recent situation where serious issues were raised over how an EU flag State had handled a large influx of ships to its

[64] COM(2022) 289 final.

newly created second register in a short time[65]. It transpired that the flag administration had little knowledge or control over the second register or its commercial manager and had not performed a single inspection of the ships changing into its flag and had not monitored the work performed on these vessels. They had basically only staff to do the administrative and paper work and the increase of the workload had not been matched with resources. It became clear that the administration was overwhelmed and under pressure to issue statutory certificates without any real control or monitoring of the ships in question[66].

3. WHY SHOULD THE EU ACT?

3.1. Legal Basis

The legal basis giving the EU the right to act is Article 100(2) of the Treaty on the Functioning of the European Union. Article 91(1)(c) of the Treaty provides that the Union has competence in the field of transport to lay down measures to improve transport safety.

Within this legal framework, the EU provides for a coordinated and harmonised safety standard, protecting life and the marine environment across the Union. The incorporation of FSD within EU law also provides for the essential support that EMSA offers the Member States in terms of targeting, recording and sharing inspection results and training for the flag State inspections they perform. Travelers and citizens in general can be reassured that a similar safety standard exists across the Union and the results of inspections (both by flag States and port States) are shared and monitored so that there is no weak link in terms of maritime safety.

3.2. Subsidiarity: Necessity of EU action

Under the principle of subsidiarity, in areas which do not fall within its exclusive competence, the Union shall act only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States. To the extent that international instruments in the field of flag State control are an exclusive Union competence pursuant to Article 3(2) TFEU, the subsidiarity principle does not apply, either to those instruments, or to Union rules implementing those agreements.

Shipping is an international sector, operating in different EU and international waters and regulated at the global level as well as by regional and national instances. Therefore, it has by nature a strong cross-border dimension. A key objective of the EU Maritime safety policy for over 30 years has been to establish equal conditions in the internal market, under which quality ships and flags compete for maritime transport.

In absence of EU action, the current legal uncertainty would remain and the EU Member States would be transposing international obligations into national legislation in an uncoordinated way. Ultimately, this would lead to less protection for EU citizens, maritime safety and the environment.

Whereas the practice of flagging is a right only enjoyed by sovereign States, the conditions for granting and maintaining the flag are determined according to international conventions ratified by the Member States. As pointed out above under problem driver 1, the matter is formally and legally Union exclusive competence as

[65] In a very short time (3 ½ years) the second register grew 883% (in terms of tonnage) notably by attracting ships, especially large containerships, to reflag. Figures show that close to 1/3 of the ships came from other EU flags (12 Member States).

[66] This led to inquiries from the Commission regarding how they had applied Article 4 of the FS Directive and how their Quality Management System was working (as it should normally pick up such omissions before they happen and ensure the orderly handling of any such new entry to the flag in a transfer of flags).

recognised by Council Decision 2013/268/EU, setting out the Union position that had to be followed by Member States in IMO at the time (in 2013) of agreeing the III-Code.

3.3. Subsidiarity: Added value of EU Action

The 2018 ex-post evaluation concluded on the EU added value regarding the legal obligations and enforcement that the flag State Directive brings in terms of harmonisation, consistency, and coherence between Member States and their responsibilities. It also found that the effective implementation of international rules, such as the IMO III-Code, should be ensured through the Directive.

The main added value of a revised Directive lies foremost in continuing to ensure a harmonised and coherent approach towards ships flagged in EU Member States, by incorporating and consolidating mandatory international rules, also bringing legal certainty under the EU legal order.

4. OBJECTIVES: WHAT IS TO BE ACHIEVED?

4.1. General Objectives

In view of the Problems identified in Section 2, the revision of the Directive has three general objectives: (1) maintain a level playing field and avoid market distortions; (2) ensure high levels of maritime safety; and, (3) ensure prevention of maritime pollution due to marine casualties. This revision should thus also contribute towards Sustainable Development Goal (SDG) 3 ("Ensure healthy lives and promote well-being for all at all ages") and SDG 14 ("Conserve and sustainably use the oceans, seas and marine resources for sustainable development").

4.2. Specific Objectives

To address the identified problem drivers, four specific objectives have been set. The specific objectives (SOs) and their correspondence with the problem drivers are presented in Figure 5.

SO1: Align the flag State Directive with new international rules. The review aims at incorporating and consolidating the relevant parts of the IMO III-Code into the Directive, as well as maintaining and aligning the requirement for Member States as flag States to undergo the IMO Audit to maintain applicability, uniformity and ensure enforcement, as well as attractiveness of a high-quality EU MS flagged fleet.

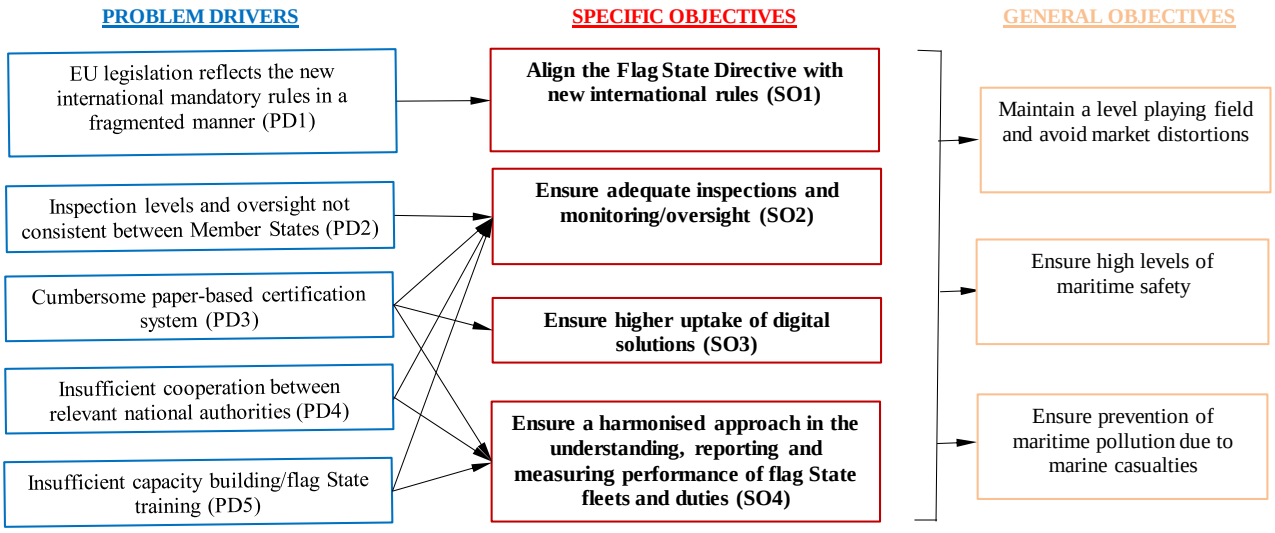
SO2: Ensure adequate inspections and monitoring/oversight. The review aims at ensuring adequate inspection levels and oversight, including for the monitoring of ROs. It also aims at enhancing and harmonising training of FS inspectors across EU Member States, with EMSA support, to improve technical and operational capacity.

SO3: Ensure higher uptake of digital solutions. The review aims to digitalise paper-based Member State flag registers via e-certification registers and e-certificates (building on EMSA hosted solutions) using a common available technical protocol with the key feature of enabling interoperability at EU-level. This should allow sharing relevant flag State information for enabling increased efficiency at both national and EU level. SO3 will also facilitate the achievement of SO2 as it will contribute towards the efficient use of information supporting technical expertise in performing inspections and monitoring of the flagged fleet/ROs.

SO4: Ensure a harmonized approach in the understanding, reporting and measuring performance of flag State fleets and duties. The review aims at modernising the criteria in the FSD for measuring flag State

performance (measuring both fleet and administration performance) through a common approach among Member States. SO3 will also facilitate the achievement of SO4. By sharing the results of the inspections and monitoring via e-reporting with other Member States in a systematic way, flag State administrations will be able to identify issues of common concern and take common action to correct such issues. This also apply to the oversight of ROs performing statutory work on behalf of the Member States. This sharing, together with a dedicated forum to discuss flag State compliance issues, creates a certain transparency and therefore peer-review. This may also result in less deficiencies detected and/or detentions in PSC inspections.

Figure 5: Correspondence between the specific objectives and the problem drivers



5. WHAT ARE THE AVAILABLE OPTIONS?

5.1. What is the baseline from which options are assessed?

The EU Reference scenario 2020 (REF2020) is the starting point for the impact assessment of this initiative. The REF2020 takes into account the impacts of the COVID-19 pandemic that had a significant impact on the transport sector. More detailed information about the preparation process, assumptions and results are included in the Reference scenario publication[67]. Building on REF2020, the baseline scenario for this impact assessment has been designed to include the initiatives of the 'Fit for 55'[68] package proposed by the Commission on 14 July 2021 but also accounts for the achievement of the milestones of the Sustainable and Smart Mobility Strategy[69] on shifting more activity towards more sustainable transport modes, thus reflecting in a stylised way other initiatives that are meant to lead to a modal shift towards waterborne transport and that are currently in preparation. A common baseline was developed for this impact assessment, as well as for the PSC and maritime accident investigation impact assessments to ensure consistency. Therefore, the baseline scenario for this initiative does not consider[70] the revision of the Port State Control Directive and of the Directive on the investigation of accidents in the maritime

[67] EU Reference Scenario 2020 (europa.eu)
[68] Delivering the European Green Deal | European Commission (europa.eu)
[69] EUR-Lex - 52020DC0789 - EN - EUR-Lex (europa.eu)
[70] In line with the Tool #60 of the Better Regulation toolbox, for the sake of coherence, where two or more initiatives are being presented together (e.g. as a package) each impact assessment report should use the same baseline. For this reason, a common baseline scenario was used for the three initiatives.

transport sector. In this context, it should be noted that neither the revision of the PSC Directive nor the AI Directive is expected to have a direct impact on the problems identified in section 2.1. They are also not expected to have an impact on the maritime transport activity and on the number of commercial vessels. With regard to safety (i.e. the projected number of fatalities and injuries) and environment (i.e. the tonnes of bunker fuel lost at sea), the revision of the AI Directive primarily focuses on fishing vessels, which are outside the scope of FS Directive. Thus, no impact is expected on the baseline. For the revision of the PSC Directive, part of the measures with impact on safety and environment also relate to fishing vessels.

The baseline scenario assumes no further EU level intervention beyond the current Directive. The IMO III-Code became mandatory on 1 January 2016. Parts 1 and 2 of the III-Code are particularly relevant for the flag States. Some sections of Parts 1 and 2 are already covered in full (i.e. records, improvement, delegation of authority, flag State investigations) or in part by EU legislation (e.g. objectives, improvement, implementation). Parts 3 and 4 of the III-Code are covered in EU legislation via the VTMIS Directive[71] and the PSC Directive. These elements are included in the baseline scenario.

The IMO Audit has also become mandatory since the adoption of the Directive under the III-Code, while the current corresponding provision in the FSD (Article 7) requiring Member States to undergo the then voluntary IMO audit, ceased to be applicable. All Member States have undergone the IMO Audit and are expected to continue to do so, as flag States agreed to be bound by the mandatory rules following the Council Decision 2013/268/EU. Thus, the IMO Audit is part of the baseline.

The COVID-19 pandemic had a major impact on global shipping, affecting all its segments from passenger ships to container ships and oil tankers. In the baseline scenario, international maritime freight transport activity (intra and extra-EU) is projected to be 21% lower in 2020 relative to 2015. From 2021 onwards however it is projected to start recovering and grow strongly by 2025 and beyond (i.e. 19% growth for 2015-2030 and 48% for 2015-2050), due to the rising demand for primary resources and container shipping. Relative to 2019, this is equivalent to 8% increase in transport activity by 2030 and 33% growth by 2050.

Driven by the increase in the transport activity and the number of vessels, the number of marine casualties is projected to increase over time in the baseline scenario. The number of marine casualties in which EU flagged vessels are involved is projected to increase by 7% by 2030 relative to 2019 and by 45% by 2050 without further EU level action. At the same time, the degree of severity of marine casualties is projected to decrease, leading to a 17% decrease in the number of fatalities in which EU flagged vessels are involved by 2030. However, post-2030 the increase in the transport activity and the number of EU flagged vessels outweighs the reduction in the degree of severity of marine casualties and the number of fatalities increases by 14% by 2050 relative to 2019. This is still far from the milestone of the Sustainable and Smart Mobility Strategy to achieve a close to zero death toll for all modes of transport in the EU.

The tonnes of bunker fuel lost at sea due to very serious marine casualties involving EU flagged ships is estimated to go up from around 390 tonnes in 2019 to 510 tonnes in 2030 and 690 tonnes in 2050[72].

The baseline incorporates foresight megatrends[73] and developments captured in the 2022 Strategic Foresight Report[74]. Among others, it captures the trend of increasing demand for transport as population and living

[71] Directive 2002/59/EC

[72] An average level of 30 tonnes of bunker fuels lost per vessel has been used for the estimations in the context of the impact assessment support study.

standards grow. The 2022 Strategic Foresight Report also reconfirms the existing megatrends identified in the 2021 Strategic Foresight Report[75] and more specifically, the megatrends of "Climate change and environmental degradation" and that of "Accelerating technological change and hyperconnectivity" that relate to the ongoing twin green and digital transitions. The ability of the EU to achieve these twin transitions very closely relates to the deployment of existing and new technologies in scale and their appropriate framing with relevant policies to achieve their maximum effectiveness. "Enabling a greener transport sector with digital technologies" is one of the areas where the twinning of the green and digital transitions is expected to have a major effect. Relevant to the FSD revision are the use of digital ship related certificates and documents using and developing IT tools, hosted in EMSA, for the purpose of enabling sharing and increased transparency as well as efficiency within and between maritime administrations in the EU and for the benefit of the industry (shipowners and operators as well as marine insurance, classification and shippers). In the baseline scenario, the total costs for the EU flag State authorities for performing flag State inspections are projected to increase from EUR 2.5 million in 2021 to EUR 2.8 million in 2030 and EUR 3.8 million in 2050. More details on the baseline scenario are included in Annex 4.

It was not possible to quantify the impact of the Russian invasion of Ukraine in the context of the baseline scenario, as there is large uncertainty with respect to its impacts, in particular for the medium to long term. While the impact of the Russian invasion of Ukraine is felt in terms of trade (e.g. grain, bulk fertilizers and hydrocarbons) and in certain geographical areas (parts of the Black Sea[76]), the impact on FSD is expected to be limited. This is because the Directive only addresses the EU flagged fleet.

5.2. Description of the policy measures and policy options

As a first step, a list of possible policy measures was established after extensive consultation with stakeholders, expert meetings, and independent research. This list was subsequently screened based on the likely effectiveness, efficiency and proportionality of the proposed measures in relation to the given objectives, as well as their legal and technical feasibility, following input from the stakeholders.

Discarded policy measures and options

A number of possible policy measures and policy options that were initially considered were discarded following the screening/analysis above. The discarded policy measures and options and the reasons for discarding them are set out in Annex 12.

Retained policy measures and policy options

The retained policy measures to address the problems and problem drivers identified in section 2, and the specific objectives identified in section 4, are provided in Table 1 below, linking the retained policy measures with the specific objectives and the policy options (POs). A more detailed presentation of the retained policy measures is provided in Annex 13.

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[73] https://knowledge4policy.ec.europa.eu/foresight/tool/megatrends-hub_en#explore
[74] COM(2022) 289 final.
[75] 2021 Strategic Foresight Report | European Commission (europa.eu)
[76] The EU initiative on Solidarity lanes and the UN initiative on grain trade from UA does in not preclude shipowners under EU Member State flags to participate, as long as the ships qualify.

The retained policy measures were structured into those common across policy options (PM1 to PM8), presented in the first part of Table 1, and those different across options (PM9a to PM11b), presented in the second part of Table 1. The policy measures are then presented according to four main areas. The main differences between options are related to inspections requirements and monitoring of flagged fleet but also to capacity building in Member States. These aspects are considered in a balanced way, to avoid disrupting the competitive situation of the flags affected. All policy measures (PMs) common across policy options have found strong support from both Member States and industry consulted. For the PMs different across policy options, the support varies depending on the size and type of flagged fleet and also the extent to which the flag is using recognised organisations to do the technical work on behalf of the EU MS flag State.

Table 1: Links between the retained policy measures, specific objectives and policy options

Policy Measures	**Specific objectives/ *Problem Drivers***	**Policy options**			
		PO1	**PO2**	**PO3**	**PO4**
Policy measures common across options					
Incorporation of and alignment to the international rules and procedures					
PM1: Incorporate the relevant flag State parts of the III-Code and maintain IMO Audit mandatory	SO1 *PD1*	√	√	√	√
PM2: Nominate European Commission/EMSA as observes at IMO Audits	SO1 *PD1*	√	√	√	√
Cooperation, continuous improvement and performance					
PM3: Establish a flag State expert group to promote cooperation between the Member States and the European Commission	SO2, SO4 *PD4*	√	√	√	√
PM4: Modernise the way Flag State performance is measured	SO4 *PD2*	√	√	√	√
Digitalisation and exchange of information					
PM5: Introduce a technical solution for use by the Member States requiring: (i) e-certificate registry, reporting of (ii) e-certificates, (iii) e-FS inspection reports, enabling exchange and sharing of information between the Member States and with EU-wide systems (hosted in EMSA)	SO3, SO4 *PD3*	√	√	√	√
PM6: Develop a mechanism and template for reporting information and statistics	SO3, SO4 *PD3*	√	√	√	√
Capacity building, inspections and monitoring of flagged fleet					
PM7: Specify EU Oversight programme of flagged fleet and RO's	SO2, SO4 *PD2, PD5*	√	√	√	√
PM8: Introduce common capacity building and harmonised training (post-qualification) for Flag State inspectors / surveyors / auditors	SO2, SO4 *PD2, PD5*	√	√	√	√
Policy measures different across options					
Capacity building, inspections and monitoring of flagged fleet					
PM9a: Define flag State inspector to prevent the use of non-exclusive technical staff	SO2 *PD2, PD5*	√		√	√
PM9b: Frame when non-statutory staff can be used and for what inspections	SO2 *PD2, PD5*		√		
PM10: Introduce specific requirement regarding inspections, commensurate with the size and type of fleet	SO2 *PD2*		√		

Policy Measures	Specific objectives/ *Problem Drivers*	Policy options			
		PO1	PO2	PO3	PO4
PM11a: Require FS to do the International Safety Management (ISM) audit and issue ISM Certificates (Statutory), combined with a number of FS inspections to be performed	SO2 *PD2*			√	
PM11b: Require full statutory survey by FS when 'high risk' ships wish to register under a MS flag	SO2 *PD2*				√

Policy measures common across policy options

(i) **Incorporation of and alignment to the international rules and procedures** developed after the adoption of the Directive in 2009 and agreed upon by EU Member States.

This area includes policy measures PM1 (*Incorporate the relevant flag State parts of the III-Code and maintain IMO Audit mandatory*) and PM2 (*Nominate European Commission/EMSA as observers at IMO Audits*) which address SO1 (*Align the flag State Directive with new international rules*). These policy measures received support during the stakeholders' consultation: 10 of the 17 Member States who replied either agreeing or strongly agreeing, with the remaining 7 taking a neutral stance. In the final stakeholders' workshop organised in January 2022, no Member State opposed this measure and no concerns were raised by industry stakeholders (ROs, shipowners, etc.). The incorporation and alignment of the Directive with the relevant flag State parts of the IMO's III-Code and IMO Audit (PM1) would not imply extra burden on Member States, since all of them are already bound by the III-Code and have undergone the IMO Audit, and will continue to have to do so in the 7-year cycle. PM1 is however expected to provide legal certainty.

In addition, to improve transparency, ensure synergies and avoid overlapping audits, PM2 enables the Commission and/or EMSA to participate as observers (on the side of the flag State) during IMO Audits. This would also allow EMSA to start a visit programme, checking implementation of the FSD, in Member States on behalf of the Commission. In the consultations no stakeholder opposed the measure, and only one Member State raised some concerns about PM2.

(ii) **Cooperation, continuous improvement and performance** through learning lessons from the 10+ years of implementation.

This area includes two measures, PM3 (*Establish a flag State expert group to promote cooperation between the Member States and the European Commission*) and PM4 (*Modernise the way Flag State performance is measured*), that both contribute towards meeting SO4 (*Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties)* while PM3 also contributes towards SO2 (*Ensure adequate inspections and monitoring/oversight*). No Member State or industry representative opposed establishing a flag State expert group (PM3). In addition, 10 of the 17 flag States interviewed were in favour of a revision of the current criteria for measuring flag State performance (PM4). In the course of the consultation, in particular during the dedicated workshop on possible criteria for measuring performance[77], stakeholders, both flag State administrations and industry, acknowledged the need to take into account also the performance of the flag State administrations in addition to the fleet performance, based on a more

[77] Workshop on measuring FS performance: the paradigm shift in KPIs from fleet to governance, October 2021 and targeted interviews.

dynamic approach by applying modern and transparent techniques to measure performance (risk based approach).

(iii) **Digitalisation and exchange of information**, with the purpose of supporting maritime administrations in exercising their obligations as well as increase information sharing.

This area covers policy measures PM5 (*Introduce a technical solution for use by the Member States requiring: (i) e-certificate registry, reporting of (ii) e-certificates, (iii) e-Flag State inspection reports, enabling exchange and sharing of information between the Member States and with EU-wide systems (hosted in EMSA)*) and PM6 (*Develop a mechanism and template for reporting information and statistics*), that contribute to SO3 (*Ensure higher uptake of digital solutions)* and SO4 (*Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties*). Both policy measures were supported by 12 of the 17 Member States who responded to the consultation, who agreed or strongly agreed. Emphasis was put on the need to ensure interoperability (rather than fixing one standard) and the ability to share information between administrations using existing EU-wide operational systems, building on EMSA developed technical solutions and databases (e.g. THETIS[78]). The industry was generally in favor of further digitalisation, and shipowners commented that an effective, efficient, modern and supportive flag State (which requires increased digitalisation) can have a strong positive effect on its attractiveness.

(iv) **Capacity building, inspections and monitoring of flagged fleet,** with the aim to ensure technical and operational capability in EU flag administrations to perform the obligations incumbent upon them.

This policy area covers measures PM7 (*Specify EU Oversight programme of flagged fleet and RO's*) and PM8 (*Introduce common capacity building and harmonised training (post-qualification) for Flag State inspectors/surveyors/auditors*) that contribute towards SO2 (*Ensure adequate inspections and monitoring/oversight*) and SO4 (*Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties*). Both policy measures received stakeholders' support, with 13 of the 16 Member States responding to this question in the consultation process agreeing on capacity building and training measures, involving EMSA, as well as on introducing an EU RO oversight programme.

Policy measures different across policy options

PM9a (*Define flag State inspector to prevent the use of non-exclusive technical staff*) and PM9b (*Frame when non-statutory staff can be used and for what inspections*) concern the use of technical staff that is not exclusively employed by the flag State administration, contributing towards SO2 (*Ensure adequate inspections and monitoring/oversight*). This is currently not specified either in the FSD or in the III-Code, but during the impact assessment process important differences were identified in how Member States currently meet the requirement of 'adequate resources'. PM9a would prohibit using non-exclusive technical staff. PM9b would not prohibit this use but it would seek to set requirements for if, when and how such personnel could be used and for what type of technical work and inspections (not statutory). There was, however, quite strong opposition from the Member States on the measure to disallow non-exclusive flag State inspectors (PM9a), shared by the industry. The main reason put forward was that it is not who does the work that is important, the key aspect being that the respective personnel has the right qualification and training, ensuring that verifications/inspections are done properly. While not all EU flag administration use non-exclusive staff,

[78] The port State control reports database hosted in EMSA

some do (MT, CY and LU) and they argue that the implications of a prohibition may be high, while not necessarily improving the overall objective of maritime safety and pollution prevention.

PM10 (*Introduce specific requirement regarding inspections, commensurate with the size and type of fleet*) would complement PM9b and aim to define the share of the fleet inspected per year, commensurate with the type and size of flagged fleet. PM10 contributes towards SO2 (*Ensure adequate inspections and monitoring/oversight*). This would be done via a delegated act. For the assessment, it is assumed that 25% of the MS flagged fleet would be inspected per year, so that the entire fleet would be inspected over a four year period. This measure would also support PM7, to perform purposeful and efficient monitoring of ROs. It should also support prioritising resources by Member States to flag State administrations, to support fulfilling their obligations. During the stakeholder consultation, 7 of 15 flag State administrations mentioned that they are experiencing staff shortages in the category flag State Surveyors/inspectors/auditors. There is however no uniform view in how to address this issue, some Member States pointing to difficulties and the need to consider national circumstances as well as the size and type of fleet.

PM11a (*Require FS to do the International Safety Management[79] (ISM) audit and issue ISM Certificates (Statutory), combined with a number of FS inspections to be performed*) and PM11b (*Require full statutory survey by flag State when 'high risk' ships wish to register under a MS flag*) both aim to strengthen the current Article 4 of the Directive by requiring the flag State administrations to carry out the surveys when the ship first enters its register/flag, and contribute towards SO2. This would allow the administrations to get a firsthand impression of the quality of the ships and to gain a better control. Today, most of this work is done by ROs on behalf of the flags. The measures would therefore require the flag States to have the necessary staff and expertise to carry out such survey and inspection work. In addition, PM11a would also require that 10% of the MS flagged fleet would be inspected per year, so that the entire fleet would be inspected over a ten year period. There was, however, quite strong opposition from the Member States on the measures requiring the flag States to retain some of the statutory survey work to be performed by them directly, shared by the industry, for the same reasons as for PM9a explained above. For industry, the reason is that they do not think Member States as flag States are (any longer) equipped and have the right human resources to do such statutory work.

Description of the policy options

The retained policy measures have been grouped in 4 policy options (PO1, PO2, PO3 and PO4). All policy options include the common policy measures (PM1 to PM8), contributing towards all specific objectives.

The extensive consultations with stakeholders[80], which confirmed their very high interest for the measures common to all policy options, expert meetings, independent research and the Commission's own analysis building on experience with the implementation of the 2009 maritime safety package, the results of the ex-post evaluation as well as consideration of the analysis done on the basis of IMO audits[81] so far and the indications of common findings and shortcomings as well as root-cause analysis done by individual Member States as required by Article 8.2 of the FSD (in cases where their performance is not satisfactory), resulted in

[79] The IMO International Safety Management (ISM) Code provides for an international standard for the safe management and operation of ships and for pollution prevention, under the code ship owners/operators and companies must have a Safety Management System (SMS) and a Document of Compliance (DOC) attesting SMS effectiveness.
[80] During the consultation workshop in November 2021 with the EU MS Maritime Directors and at the stakeholders' consultation workshop organised in January 2022, these policy measures were the main focus of discussion.
[81] See Annex 8

the four groups of common measures on alignment to international rules, cooperation and performance, digitalisation and capacity building representing the "must-have" for any meaningful policy intervention.

The difference between the policy options stems from the approaches to meet SO2, to ensure flag State compliance. They differ in the level of harmonisation and control for ensuring compliance. This is the core of the matter: flags must ensure compliance as the responsibility that a ship is fit for purpose lies with them; it is the flag State administration that has the last word if a ship under its flag should be issued with the relevant certificates or not. That is the responsibility and quality control under international and EU rules and key for maritime safety and pollution prevention leading to quality shipping.

For the policy measures that are different across policy options, the stakeholders' support varied depending on the size and type of the flagged fleet and also the extent to which the flag is using recognised organisations to do the technical work on behalf of the EU MS flag State. There is however always a cost associated with upholding competences and knowledge/expertise of employed staff and control/monitoring of flagged fleet. This is also an area where there is a need to have some harmonisation at EU level to avoid a situation of excessive divergence and therefore the risk of distortion of competition between the EU Member States flags. Another aspect that needs consideration is the possibility to actually find the technical expertise needed (assuming that the necessary financial resources could be made available).

There is therefore a need for the introduction of a more harmonised way in which control of flagged fleet should be done, taking into consideration that the type and size, as well as trading area, of ships varies between Member States. This was taken into consideration in finding a balance that would allow to meet the specific objective 2 (Ensure adequate inspections and monitoring/oversight), while leaving it to flag States to decide to what extent they want to do statutory work or not, and use ROs. In addition, both flag States and industry stakeholders argued for a measured approach.

Policy option 1 (PO1) additionally includes PM9a that prevents the use of non-exclusive technical staff from doing any type of work for the flag State administrations. Administrations would need to get resources to recruit, employ and retain relevant technical staff to undertake flag State inspections and RO monitoring. This would put all administrations on equal footing, aiming to avoid any competitive advantage by outsourcing and reducing costs. It assumes that such technical expertise is readily available for the administrations concerned and can be employed. While this concerns only three Member States (MT, CY, LU) currently using such non-exclusives, in particular MT and CY have the biggest flagged fleets in the EU, together making up close to 33% of the EU flagged fleet and much of that fleet is sailing in cross-trades all over the world.

Policy option 2 (PO2) does not prohibit the use of non-exclusive technical staff but 'ring-fences' when and for what type of surveys, in which circumstances, such non-exclusive personnel could be allowed (PM9b). This reflects current practice for some Member States and accepts that it is the quality of the work that is essential and not the status per se of the person doing it. Nevertheless, it would clarify the controlled conditions for such use, in particular avoidance of any conflict of interest. To avoid a situation where this is, or risks, becoming the 'norm', PM9b is coupled with PM10, which introduces specific requirements regarding inspections, commensurate with the size and type of fleet, with the aim that all EU flag administrations retain core technical staff within the administration for the core work in ensuring monitoring of their ROs and compliance of their flagged fleet. For the assessment, it is assumed that 25% of the MS flagged fleet would be inspected per year, so that the entire fleet would be inspected over a four year period. Flag State Inspections need to be performed as a complement to surveys for the dual purpose of ensuring the

ship is fit continuously reflecting the certificates issued and, for monitoring directly on the spot the work performed by ROs on behalf of the flag State

Policy option 3 (PO3) includes measure PM9a and would additionally clarify Article 4.1 of the Directive, which currently leaves it to the flag State to *'…take measures it deems appropriate..'*, by specifying and requiring the Member States flag administrations to have the capacity to do the statutory work and issue the related statutory certificates related to the International Safety Management Code (PM11a). This reflects to some extent the current situation where some Member States do this (and have not given this away to ROs). This would not affect the fleet currently flagged but only apply when a ship changes flag into the Member State flag register, and would allow the flag administration to have a first-hand impression of the safety culture both on board and of the shipowner/management company for 'new' entrant ships to the register. Any subsequent such audits may then be performed by ROs. This option is reduced in scope as compared to a requirement where all statutory work would be required for any first entrant ship and prohibits the use of non-exclusive surveyors (PM9a). It would mean that Member States would need to have exclusively employed experts in ISM. In addition, PO3 would also require that 10% of the MS flagged fleet would be inspected per year, so that the entire fleet would be inspected over a ten year period (PM11a). This is a key difference in respect to PO2. The complementarity with the ISM audit and the issuing of the ISM Certificates would allow control of the flagged fleet in terms of safety culture but is only one of the many statutory parts required, and would be done when a ship changes flag from another flag State.

Policy option 4 (PO4) would also clarify Article 4.1 of the Directive by specifying and requiring Member States flags to have the capacity to do the statutory survey work and issue the related statutory certificates concerning 'high-risk'[82] ships (PM11b), prior to allowing them to operate under a Member State flag. There is a limited number of such transfers, but it still requires the flag State administrations to have all required expertise, for all statutory work and not only for ISM. PO4 would therefore also prohibit the use of non-exclusive technical staff (PM9a). The difference between PO2, PO3 and PO4 is the scope of the technical work and therefore the resources and technical staff required. Both PO2, PO3 and PO4 could be considered over and above what is required by the III-Code, but actually address the problem of ensuring that Member States as flag States have adequate expertise to meet their obligations.

In PO 3 there is a certain such specific requirement as in PO2. This measure would strengthen the current requirement (Article 4) where a ship is flagging into the register and all first such statutory ISM audits would be made mandatory and linked with a certain number of flag State inspections, done by exclusive staff of the flag State administration, to verify also all other statutory aspects as normally performed by ROs on behalf of the flag State. The difference with PO2 is that in PO3 however, 'only' 10% of the Member States flagged fleet would be required to be inspected per year, so that the entire fleet would be inspected over a ten year period.

Following the targeted stakeholders' consultation and other consultation activities, the measures and options were discussed again during the final stakeholder workshop organised in January 2022 (see Annex 2 point 3.4), with an indication of preference for PO2 (with the combination of PM9b and PM10), ahead of PO3 with PM11a requiring the Member States to do the first ISM audit and then a number of FS inspections, in combination with PM9a. All agreed that the III-Code requires such flag State inspections and RO monitoring

[82] As classified in the Paris MoU port State control system (meaning they have a poor inspection history and/or and are therefore prioritised for PSC Inspection)

and that at the EU level it needs to be harmonised in relation to the size and type of flagged fleet, as well as trading area of flagged fleet.

6. WHAT ARE THE IMPACTS OF THE POLICY OPTIONS?

This section summarizes the main expected economic, social and environmental impacts of each policy option[83]. The proposed measures are assumed to be implemented from 2025 onwards, so the assessment has been undertaken for the 2025-2050 period and refers to EU27. Costs and benefits are expressed as present value over the 2025-2050 period, using a 3% discount rate. Further details on the methodological approach and impacts on costs by measure for the policy options are provided in Annex 4.

6.1. Economic impacts

This section provides the economic impacts of the policy options on the public authorities (i.e. flag State administrations, European Commission and EMSA) and ship operators. It also provides an assessment of impacts on small and medium enterprises (SMEs), the functioning of the internal market and competition, and on competitiveness.

6.1.1. Impacts on public authorities

Impacts on flag State administrations. All policy options lead to an increase in the adjustments costs and enforcement costs for the EU flag State administrations relative to the baseline. They also result in enforcement costs savings (see Table 2). More explanations on each category of costs by policy option are provided below, while the detailed costs and costs savings by policy measure and by Member State, including the assumptions used to derive them, are provided in Annex 4.

Adjustment costs for flag State administrations. Adjustment costs for flag State administrations relative to the baseline are driven by: (i) one common policy measure included in all options, related to the implementation of the technical solutions for e-certificate registry, reporting of e-certificates and e-FS inspection reports (PM5); (ii) measure PM9a (define flag State inspector to prevent the use of non-exclusive technical staff) included in PO1, PO3 and PO4; (iii) measure PM10 (specific requirement regarding inspections, commensurate with the size and type of fleet) included in PO2; (iv) measure PM11a (require FS to do the International Safety Management audit and issue ISM certificates, combined with a number of FS inspections to be performed) included in PO3; and (v) measure PM11b (require full statutory survey by FS when 'high risk' ships wish to register under a MS flag) included in PO4. On the other hand, the incorporation and alignment as regards IMO instruments (PM1 and PM2) are not expected to give rise to additional costs relative to the baseline for flag State administrations, as explained in Annex 4.

For all policy options, measure PM5 (technical solutions for e-certificate registry, reporting of e-certificates and e-FS inspection reports) is relevant for 11 Member States (BG, EE, ES, FR, IT, IE, LT, LV, PL, RO and SE)[84]. The one-off capital costs are estimated by EMSA at EUR 300,000 per flag State administration in 2025

[83] The analysis in this section is based on the VVA et al. (2023), *Impact assessment support study concerning possible revision of Directive 2009/21/EC on compliance with flag State requirements*, and on the analysis of stakeholders' feedback.

[84] So far, 6 Member States have implemented the e-certification register and reporting of e-certificates (BE, DK, DE, FI, PT and CY) and MT is in the process of implementing it. Few Member States such as AT, CZ, HU, SI and SK do not have an active register or convention ships flying their flag any longer, and do not have to put in place an e-certification registry. In addition, 5 Member States do not issue e-certificates themselves but have delegated this function to Recognised

and the annual costs for maintenance at EUR 100,000 per flag State administration from 2026 onwards. At the EU level, the one-off capital costs in 2025 are estimated at EUR 3.3 million, and the maintenance costs at EUR 1.1 million per year from 2026 onwards (see Table 2).

For PO1, PO3 and PO4, measure PM9a (define flag State inspector to prevent the use of non-exclusive technical staff) is relevant for 3 flag State administrations that make use of non-exclusive inspectors (CY, MT and LU)[85]. The average cost per hour of inspection by a non-exclusive inspector is estimated at EUR 124, while the cost per hour of inspection for an exclusive inspector at EUR 148[86]. In the baseline, 845 inspections are estimated to be performed by non-exclusive inspectors in CY, LU and MT in 2025, going up to 891 in 2030 and 1,216 in 2050. The additional costs of inspections being performed by exclusive inspectors instead of non-exclusive inspectors relative to the baseline are thus estimated at around EUR 0.2 million in 2025 and 2030 and EUR 0.3 million in 2050 (see Table 2).

For PO2, measure PM10 (specific requirement regarding inspections, commensurate with the size and type of fleet) is expected to increase the number of inspections for the 13 flag State administrations that inspect less than 25% of their flagged fleet in the baseline (BE, DK, DE, EE, EL, FR, HR, IT, NL, PT, RO, FI, SE). The additional number of inspections relative to the baseline is estimated at 734 in 2025, 769 in 2030 and 1,042 in 2050, leading to adjustment costs of around EUR 1.3 million in 2025 and 2030, and EUR 1.8 million in 2050 relative to the baseline (see Table 2).

For PO3, measure PM11a (require FS to do the International Safety Management audit and issue ISM certificates, combined with a number of FS inspections to be performed) is relevant for 15 flag State administrations (DK, EE, IE, EL, HR, CY, LV, LT, LU, MT, NL, PT, RO, FI, SE) that would need to do the International Safety Management (ISM) audit every 5 years[87]. The costs for the ISM audit for these flag State administrations are estimated at EUR 2.2 million in 2025, EUR 2.3 million in 2030 and EUR 3.2 million in 2050 relative to the baseline. With regard to inspections, the measure is expected to increase the number of inspections for the 7 flag State administrations that inspect less than 10% of their flagged fleet in the baseline (DE, EE, HR, IT, PT, RO, FI). The increase in the number of inspections for these flag State administrations is estimated at 166 in 2025, 173 in 2030 and 233 in 2050 relative to the baseline, leading to adjustment costs of around EUR 0.3 million in 2025 and 2030 and EUR 0.4 million in 2050. In total, PM11a would lead to adjustment costs estimated at EUR 2.5 million in 2025, EUR 2.6 million in 2030 and EUR 3.6 million in 2050 in PO3 relative to the baseline (see Table 2).

For PO4, measure PM11b (require full statutory survey by FS when 'high risk' ships wish to register under a MS flag) is relevant for 15 'high risk' ships that are projected to require full statutory survey in 2025, 16 in 2030 and 22 in 2050. The adjustment costs associated to PM11b are estimated at around EUR 0.2 million in 2025 and 2030 and EUR 0.3 million in 2050 (see Table 2).

Organisations (RO) to do it on their behalf and do not need to put in place an e-certification registry and reporting of e-certificates.

[85] CY made use of 6 non-exclusive inspectors (13% of the total number of inspectors) in 2021, Malta of 77 (78% of the total number of inspectors) and Luxembourg of 27 non-exclusive inspectors (100% of the total number of inspectors).

[86] The average number of hours for an inspection performed by an exclusive inspector is also higher than that for a non-exclusive inspector.

[87] In the baseline scenario, 4 flag State administrations (BE, BG, FR and PL) have already implemented the ISM audit. Three other flag State administrations (ES, IT and DE) issue the certificates themselves and should already have trained staff to do the ISM audits.

Total adjustment costs are estimated to be the highest in PO3 for 2025, 2030 and 2050 relative to the baseline (EUR 6 million in 2025, EUR 4 million in 2030 and EUR 5 million in 2050), followed by PO2 (EUR 4.6 million in 2025, EUR 2.4 million in 2030 and EUR 2.9 million in 2050), PO4 (EUR 3.6 million in 2025, EUR 1.4 million in 2030 and EUR 1.5 million in 2050) and PO1 (EUR 3.5 million in 2025, EUR 1.3 million in 2030 and EUR 1.4 million in 2050). Expressed as present value over 2025-2050, they are however estimated to be the highest in PO2 (EUR 48.9 million), followed by PO3 (EUR 47.7 million), PO4 (EUR 27.8 million) and PO1 (EUR 27.4 million) relative to the baseline[88]. PM5 contributes over 80% of the total adjustment costs in PO1 and PO4 (82% and 81%, respectively), and above 45% in PO2 and PO3 (46% and 47%, respectively). For PO2, measure PM10 contributes an additional 54% of the total adjustment costs while for PO3 measure PM11a provides around 43% of the total adjustment costs.

Table 2: Costs for EU flag State authorities by policy option and measure relative to the baseline (in million EUR), in 2021 prices

	Difference to the Baseline											
	PO1			PO2			PO3			PO4		
	2025	2030	2050	2025	2030	2050	2025	2030	2050	2025	2030	2050
Adjustment costs												
PM5	3.3	1.1	1.1	3.3	1.1	1.1	3.3	1.1	1.1	3.3	1.1	1.1
Enforcement costs												
PM7												
Low	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.01
High	0.00	0.03	0.03	0.00	0.03	0.03	0.00	0.03	0.03	0.00	0.03	0.03
Enforcement costs savings												
PM5												
Low	0.0	2.5	3.4	0.0	2.6	3.5	0.0	2.5	3.4	0.0	2.5	3.4
High	0.0	2.7	3.6	0.0	2.8	3.8	0.0	2.7	3.7	0.0	2.7	3.6
Adjustment costs												
PM9a	0.2	0.2	0.3				0.2	0.2	0.3	0.2	0.2	0.3
PM10				1.3	1.3	1.8						
PM11a							2.5	2.6	3.6			
PM11b										0.02	0.02	0.03
Net costs/costs savings												
Low	3.53	-1.15	-1.96	4.57	-0.13	-0.57	6.05	1.47	1.59	3.55	-1.13	-1.94
High	3.53	-1.30	-2.17	4.57	-0.33	-0.85	6.05	1.31	1.37	3.55	-1.28	-2.14

Source: VVA et al. (2023), Impact assessment support study; Note: positive numbers under the category 'net costs/costs savings' denote net costs and negative numbers denote costs savings.

Enforcement costs for flag State administrations. The increase in enforcement costs relative to the baseline are driven in all policy options by the common measure on the EU oversight programme of flagged fleet and RO's (PM7), building on the requirements of the III-Code. In the baseline scenario it is assumed that the current practices continue over time, with 12 Member States maintaining the monitoring frequency to two years, 1 Member State to five years and 6 Member States performing continuous monitoring. The EU oversight programme will be established in the context of the flag State expert group. For the purpose of the

[88] The reason for lower costs in PO3 relative to PO2 when expressed in terms of present value steams from the fact that the ISM audit is implemented every 5 years.

assessment, in PM7 the continuous monitoring is assumed to be applied in all Member States. The time spent by a flag State administration in monitoring ROs is estimated to be between 30 hours (low) and 60 hours (high) per year, leading to enforcement costs relative to the baseline of EUR 14,000 to 28,000 in 2030 and 2050 (see Table 2). Expressed as present value over 2025-2050, they are estimated at EUR 0.1 to 0.3 million.

Enforcement costs savings for flag State administrations. Enforcement costs savings relative to the baseline are driven by one common policy measure included in all options, related to the implementation of the technical solutions for e-certificate registry, reporting of e-certificates and e-Flag State inspection reports (PM5). The implementation of an *e-certification registry* system allows for easier access and more flexible case management, as well as improved availability of ship data and performance data[89]. The number of EU flagged ships not covered by the e-certification registry system in the baseline, that would need to implement it, is estimated at 4,139 in 2030 and 5,509 in 2050. The e-certification registry is assumed to be implemented in 2025 but the cost savings would occur starting from 2026 onwards. They are estimated at EUR 0.14 million in 2030 and EUR 0.18 million in 2050 in all policy options. The *reporting of e-certificates* has a positive effect on the operations of the flag State administrations by improving processes - both internal for the administration and external for customers and end-users. The system makes the process more efficient with less documentation requirements, and allows for better accessibility and ownership of data and certificates for the users[90]. The number of certificates needed by EU-flagged vessels that do not use e-certificates in the baseline are projected at 82,780 in 2030 and 112,180 in 2050. Thus, the costs savings due to the implementation of e-certificates are estimated at EUR 2.2 million in 2030 and EUR 3 million in 2050 in all policy options. For the *e-FS inspection reports*, the calculation of the enforcement costs savings for the flag State administrations draws on the number of flag State inspections performed per year[91], which is different between policy options when also considering the synergies with PM10 and PM11a (included in PO2 and PO3, respectively). Enforcement costs savings due to e-Flag State inspection reports in PO1 and PO4 are estimated at EUR 0.16 to 0.32 million in 2030 and EUR 0.22 to 0.44 million in 2050. In PO2, the costs savings are estimated at EUR 0.22 to 0.43 million in 2030 and EUR 0.29 to 0.59 million in 2050, while in PO3 they are estimated at EUR 0.17 to 0.35 million in 2030 and EUR 0.23 to 0.47 million in 2050. *Total enforcement costs savings* (see Table 2) are estimated to be the highest in PO2 (EUR 2.6 to 2.8 million in 2030 and EUR 3.5 to 3.8 million in 2050), followed by PO3 (EUR 2.5 to 2.7 million in 2030 and EUR 3.4 to 3.7 million in 2050), and PO1 and PO4 (EUR 2.5 to 2.7 million in 2030 and EUR 3.4 to 3.6 million in 2050). Expressed as present value over 2025-2050, they are estimated at EUR 48.8 to 52.9 million in PO2, EUR 48 to 51.3 million in PO3, and EUR 47.7 to 50.8 million in PO1 and PO4.

Net costs/costs savings for flag State administrations. The net costs/costs savings for flag State administrations for 2025, 2030 and 2050 relative to the baseline are provided in Table 2. Expressed as present value over 2025-2050, PO1 results in the largest costs savings (EUR 20.2 to 23.2 million), followed by PO4 (EUR 19.8 to 22.7 million) and PO3 (EUR 0.1 to 3.3 million). For PO2, the estimated range is between EUR 0.3 million costs to EUR 3.7 million costs savings.

[89] One of the flag State administrations implementing the system estimated that the time saving due to the e-certification registry is roughly 1.2 hours per year per ship.

[90] According to one of the flag State authorities that implement the system, reporting of e-certificates leads to cost savings of 1 hour per certificate per year. On average, each vessel needs around 20 certificates per year.

[91] Based on the online survey conducted among flag State authorities, the implementation of the e-FS inspection reports system could reduce the number of hours per inspection by 5% to 10%. An inspection takes on average 9.7 hours. Based on this information, a reduction of 0.5 (low) to 1 (high) hours has been applied relative to the baseline to the inspections performed by all flag State administrations, except for those that do not have an active register any longer.

Impacts on the European Commission. PM3 (establish a flag State expert group to promote cooperation between the Member States and the European Commission) is expected to lead to *adjustment costs for the European Commission*. The objective of PM3 is to create a mechanism for peer learning and knowledge sharing. The average cost for a two-day workshop hosted by the Commission, is around EUR 30,000. Therefore, an expert group meeting once to twice a year would cost between EUR 30,000 and EUR 60,000. The recurrent adjustment costs for the Commission to implement PM3 are estimated at EUR 0.6 to 1.1 million relative to the baseline, expressed as present value over 2025-2050.

Impacts on EMSA. Three common policy measures, included in all policy options, are expected to lead to *adjustment costs for EMSA* (see Table 3): (i) the implementation of the technical solutions for e-certificate registry, reporting of e-certificates and e-Flag State inspection reports (PM5); (ii) the development of a mechanism and template for reporting information and statistics (PM6); and (iii) introducing common capacity building and harmonised training (post-qualification) for Flag State inspectors/surveyors /auditors (PM8).

For PM5, no costs are foreseen for EMSA in relation to *e-certification registry*, as the Agency already has a functional web-interface that is used by the ROs. This web-interface will also be used for the flag States reporting e-certificates. For the *reporting of e-certificates*, the proposed revision of the PSC Directive foresees the development and maintenance at EU level of a common system for use of electronic certificates across flag States and ROs for the use of PSC, as well as tools for validation and inspection. In PM5, EMSA would build upon this system allowing flag State administrations to upload, exchange, validate and control e-certificates. The same system will also be used by the ROs. The development of the new module is estimated by EMSA to lead to one-off capital costs of EUR 250,000 in 2025, and maintenance costs of EUR 125,504 per year (1 full time equivalent) from 2025 onwards. Expressed as present value over 2025-2050, the adjustment costs for EMSA relative to the baseline are estimated at EUR 2.6 million of which EUR 0.3 million one-off costs.

Extending the *e-Flag State inspection report* to all EU flagged ships would require setting up a THETIS module by EMSA. Building on the experience with the ro-pax reporting module in THETIS (already enabling e-Flag State reports for ro-pax vessels), EMSA estimates one-off capital costs of EUR 100,000 in 2025. By using the EMSA hosted systems, the exchange and sharing is already ensured; no extra costs are foreseen as all systems are already interoperable. Total adjustment costs for EMSA for implementing PM5 are estimated at EUR 2.7 million expressed as present value over 2025-2050 (in 2021 prices), relative to the baseline, of which EUR 0.4 million one-off costs in 2025.

PM6 will be based on the Dynamic Overview of National Authorities (DONA), which is a voluntary e-reporting system, hosted in EMSA, allowing reporting using pre-agreed templates. Further development of DONA for allowing reporting of information and statistics under the Directive, is estimated by EMSA to lead to one-off capital costs of EUR 150,000 in 2025. In terms of maintenance, EMSA has already established the Maritime Support Services (MSS) centre which is a 24/7 facility located at EMSA's premises in Lisbon. The MSS offers round-the-clock support to ensure two main functions: the smooth running of EMSA's maritime applications and providing rapid assistance in the event of an emergency at sea. To this end, the MSS is operated by staff with specialist IT skills and maritime knowledge. MSS can support any new tool in the same manner that it supports all other maritime applications developed by the Agency. It is estimated that EUR 125,504 per year (1 full time equivalent) would be needed for maintenance of the tools from 2025 onwards. Total adjustment costs for EMSA for implementing PM6, relative to the baseline, are estimated at EUR 2.5 million expressed as present value over 2025-2050 (in 2021 prices), of which one-off costs of EUR 0.2

million. PM6 would provide benefits in terms of peer learning and knowledge sharing, and could provide tools for EMSA and the Commission to monitor the performance of the FS administrations.

PM8 aims at promoting capacity building and harmonised training (post-qualification) for Flag State inspectors/surveyors/auditors. Out of 14 flag State administrations that replied to the question on training in the context of the stakeholders' consultation, 9 flag State administrations do not provide any training at all. The capacity building and harmonised training by EMSA would overcome this deficiency in these 9 Member States. In addition, capacity building and harmonised training by EMSA can provide significant synergies, by reducing the needs to have a dedicated budget for training in each Member State[92]. PM8 would provide benefits in terms of a common core curricula for Flag State inspectors, which will in turn help to a common understanding and implementation of international/EU rules. Training of flag State inspectors (similar as for PSC officers) is foreseen on new technologies, including but not limited to renewable and low carbon fuels, which are particularly relevant in view of the "Fit for 55" package, and automation. According to EMSA, the training costs are estimated at EUR 70,000 to 100,000 per year, including the reimbursement of participants. In PM8 they are assumed to be implemented from 2025 onwards. Total adjustments costs for EMSA for implementing PM8, relative to the baseline, are estimated at EUR 1.3 to 1.8 million expressed as present value over 2025-2050 (in 2021 prices).

Overall, the adjustment costs for EMSA are estimated at EUR 0.82 to 0.85 million in 2025 and EUR 0.32 to 0.35 million in 2030 and 2050 in all policy options relative to the baseline. Expressed as present value over 2025-2050, they are estimated at EUR 6.4 to 7 million relative to the baseline.

Table 3: Costs for EMSA by policy option and measure relative to the baseline (in million EUR), in 2021 prices

	Difference to the Baseline											
	PO1			PO2			PO3			PO4		
	2025	2030	2050	2025	2030	2050	2025	2030	2050	2025	2030	2050
Adjustment costs												
PM5	0.48	0.13	0.13	0.48	0.13	0.13	0.48	0.13	0.13	0.48	0.13	0.13
PM6	0.28	0.13	0.13	0.28	0.13	0.13	0.28	0.13	0.13	0.28	0.13	0.13
PM8												
Low	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
High	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10

Source: VVA et al. (2023), Impact assessment support study

6.1.2. Impacts on ship operators

Adjustment costs savings for ship operators. All policy options result in adjustment costs savings for ship operators due to the implementation of the technical solutions for e-Flag State inspection reports (PM5). Shipowner organisations interviewed acknowledged that introducing digital solutions can reduce the adjustment costs for ship operators and their crews. In particular, the e-Flag State inspection report system would reduce the waiting time for the vessels being inspected (i.e. the cooperation time foreseen for Flag State inspections). Waiting time could be reduced by 0.1 (low) to 0.2 (high) hours per vessel inspected relative to the baseline[93]. The cost of waiting per hour for vessels is estimated at EUR 103.8 (in 2021 prices)[94]

[92] PM8 may however add on top of existing training courses provided by Member States, if Member States desire to continue so. This measure aims at promoting additional knowledge sharing and peer learning.

[93] The waiting time per vessel inspected is estimated at 2 hours in the baseline. Following the stakeholders' feedback, the implementation of digital solutions would reduce the waiting time per vessel by 5 to 10%.

and is assumed to remain constant over time in real prices. The e-Flag State inspection report system is assumed to be implemented in 2025 but the cost savings would occur starting from 2026 onwards. The calculation of the adjustment costs savings draws on the number of flag State inspections performed per year, which is different between policy options when also considering the synergies with PM10 and PM11a (included in PO2 and PO3, respectively). The costs savings for ship operators by policy option for 2030 and 2050, relative to the baseline, are provided in Table 4. Expressed as present value over 2025-2050, they are estimated at EUR 0.6 to 1.2 million in PO2, EUR 0.5 to 1 million in PO3 and EUR 0.4 to 0.9 million in PO1 and PO4. More detailed explanations on the assumptions used are provided in Annex 4.

Adjustment costs for ship operators. PO2 and PO3 would lead to an increase in the adjustment costs for ship operators due to the additional number of inspections and thus the waiting time for the vessels being inspected (i.e. the cooperation time foreseen for Flag State inspections)[95]. For PO2, the additional number of inspections relative to the baseline is estimated at 734 in 2025, 769 in 2030 and 1,042 in 2050, while for PO3 at 166 in 2025, 173 in 2030 and 233 in 2050. The adjustment costs for ship operators for 2025, 2030 and 2050 are provided in Table 4. Expressed as present value over 2025-2050, they are estimated at EUR 3.2 million in PO2 and EUR 0.7 million in PO3. No additional costs are expected for PO1 and PO4.

Net costs/costs savings for ship operators. The net costs/costs savings for ship operators for 2025, 2030 and 2050 relative to the baseline are provided in Table 4. Expressed as present value over 2025-2050, PO2 results in net costs (EUR 2 to 2.6 million) and PO1 and PO4 in net costs savings (EUR 0.4 to 0.9 million). For PO3, the estimated range is between EUR 0.2 million costs to EUR 0.2 million costs savings.

Table 4: Costs and costs savings for ship operators by policy option and measure relative to the baseline (in million EUR), in 2021 prices

	Difference to the Baseline											
	PO1			PO2			PO3			PO4		
	2025	2030	2050	2025	2030	2050	2025	2030	2050	2025	2030	2050
Adjustment costs savings												
PM5												
Low	0.00	0.02	0.03	0.00	0.03	0.04	0.00	0.03	0.03	0.00	0.02	0.03
High	0.00	0.05	0.06	0.00	0.06	0.08	0.00	0.05	0.07	0.00	0.05	0.06
Adjustment costs												
PM10				0.15	0.16	0.22						
PM11a							0.03	0.04	0.05			
Net costs/costs savings												
Low	0.00	-0.02	-0.03	0.15	0.13	0.17	0.03	0.01	0.01	0.00	-0.02	-0.03
High	0.00	-0.05	-0.06	0.15	0.10	0.13	0.03	-0.01	-0.02	0.00	-0.05	-0.06

Source: VVA et al. (2023), Impact assessment support study; Note: positive numbers under the category 'net costs/costs savings' denote net costs and negative numbers denote costs savings.

6.1.3. Impacts on SMEs

The initiative is not relevant for SMEs. As stated in Article 3 of the Flag State Directive, the Directive is applicable to "ships or craft flying the flag of a Member State falling within the scope of the relevant IMO

[94] Based on data from the Netherlands Institute for Transport Policy Analysis, which provides a breakdown of main cost categories for maritime transport industry.
[95] The waiting time per vessel inspected is estimated at 2 hours in the baseline.

Conventions, and for which a certificate is required", which refers to vessels of 300 gross tonnes (GT) or over, flying a flag of an EU Member State. These vessels tend to be international world merchant vessels, e.g. cargos for transatlantic logistics, or dimension alike. Smaller vessels, e.g. fishing boats, are not typically involved in international trade and are subject to national certificates that fall outside the scope of the Directive. Therefore, there is no impact on SMEs.

6.1.4. Digital by default

All policy options will have a positive impact on the application of the 'digital by default' principle, introduced by the common measure on the implementation of the technical solutions for e-certificate registry, reporting of e-certificates and e-Flag State inspection reports (PM5), together with the development of a mechanism and template for reporting information and statistics (PM6).

6.1.5. Functioning of the internal market and competition

Currently, the inspection level varies greatly among flag State administrations and this is expected to remain unchanged in the baseline. On average, 24.1% of EU Member States fleet is inspected. 13 flag State administrations inspect less than 24% of their flagged fleet[96], and 7 of them below 10% of their flagged fleet[97]. Leaving too much discretion to Member States as flag States does not create, enable or enhance a level playing field between shipowners and may result into flag hopping based on avoidance of costs for compliance (e.g. a repair cost required by one flag may not be required by another, as they would not have the capability to detect it) rather than quality considerations. At the end of the day, it is via inspections, monitoring and control that a flag State can ensure the safety of its flagged fleet.

All policy options are expected to have a positive impact on the functioning of the internal market, both by improving overall maritime safety for the benefit of freight customers and passengers throughout the Union and by ensuring that the same safety level applies throughout the Union. The positive impacts of PO3 and PO4 are expected to be higher than those of PO1, as PO1 'only' prohibits the use of non-exclusive inspectors (PM9a) but does not specify what and how many inspections flag States should carry out. In PO2, the use of non-exclusive inspectors is clarified but not prohibited (PM9b) and it is linked to a measure (PM10) that ensures a fair share of flag State inspections among EU Member States. The positive impact of PO2 on the functioning of the internal market and competition is expected to be the highest among the four options due to the higher harmonisation effect brought by PM10. The transparency enabled by PM5 (digitalisation) in all policy options will support the 'peer' review and have a positive impact on the functioning of internal market and competition.

6.1.6. Impacts on competitiveness

As explained in section 6.1.2, all policy options are expected to result in adjustment costs savings for ship operators while PO2 and PO3 would also lead to some adjustment costs due to the higher number of inspections relative to the baseline and thus the waiting time for the vessels being inspected (i.e. the cooperation time foreseen for Flag State inspections). Overall, annual net costs/costs savings are below EUR 0.2 million at EU level for all options. Expressed as present value over 2025-2050, PO2 results in net costs (EUR 2 to 2.6 million) and PO1 and PO4 in net costs savings (EUR 0.4 to 0.9 million). For PO3, the

[96] BE (22%), DK (24%), DE (1%), EE (0%), EL (17%), FR (20%), HR (5%), IT (6%), NL (12%), PT (0%), RO (0%), FI (5%) and SE (20%).
[97] DE (1%), EE (0%), HR (5%), IT (6%), PT (0%), RO (0%), FI (5%).

estimated range is between EUR 0.2 million costs to EUR 0.2 million costs savings. All options may also result in a decreased number of port State control detentions (or even inspections), although not possible to assess quantitatively. Therefore, it can be concluded that none of the policy options has a significant impact on the competitiveness of ship operators, considering that annual net costs/costs savings are below EUR 0.2 million at EU level in all options.

6.2. Social impacts

Social impacts are mainly assessed in terms of impacts of the policy options on maritime safety (in terms of lives saved and injuries avoided), working conditions and fundamental rights. Costs impacts for consumers from any of the policy options have not proved quantifiable but are expected to be negligible.

6.2.1. Maritime safety

As the findings of ship inspections and RO monitoring have to be followed-up and deficiencies rectified for the vessel to maintain its certificates, inspections are expected to lead to a reduction in the number of deficiencies and thereby to improve safety and environmental performance. All such actions aim to ensure that the EU Member States flagged fleet is fit for purpose. If the flag State inspections are done in a harmonised and adequate manner, this should also lead to a reduction in PSC detentions (even inspections). This is because the flags ensure better compliance with the rules that acts as quality check. The EU RO monitoring oversight (PM7), included in all options, also allows Member States to share findings identified in such monitoring in a systematic manner and, as a consequence, provide higher leverage towards ROs in taking corrective action. The transparency enabled by sharing e-Flag State inspection reports and e-certificates allows inspectors, both flag State or PSC inspectors, to have more complete information for their assessment in selecting or preparing inspections, enabling more targeted and focussed work and use of scarce resources.

This should result in a reduction in the number of marine casualties and thus of lives lost and injuries. PO2 is estimated to lead to the highest impact in terms of number of lives saved and injuries avoided during 2025-2050 (69 lives saved and 810 injuries avoided relative to the baseline), followed by PO3 (11 lives saved and 180 injuries avoided) and PO4 (0 lives saved and 16 injuries avoided)[98]. The impact of PO1 is expected to be positive although more limited, driven by the EU Oversight programme of flagged fleet and RO's. The impact of the EU Oversight programme of flagged fleet and RO's (included in all options) on the lives lost and injuries avoided was not possible to quantify.

Thus, all policy options contribute towards Sustainable Development Goal 3 ("Ensure healthy lives and promote well-being for all at all ages"), with the highest contribution provided by PO2. All policy options are estimated to result in a reduction in the external costs of accidents relative to the baseline (see Table 5)

[98] In the context of the PSC impact assessment support study a log-log relationship between the number of inspections conducted in year t and the number of marine casualties in year t+2 has been estimated. The elasticity has been estimated at -1.031 meaning that "a 1% increase in inspections in year t reduces the number of marine casualties in year 2 by 1.031%". However, as the number of ship deficiencies decreases over time, it is expected that the impact on marine casualties and thus on the number of fatalities and injuries avoided would also decrease over time. Therefore, it has been assumed that the elasticity decreases in a non-linear way by 2050, the impacts being significantly smaller post-2040 (at less than 0.2%). More explanations are provided in Annex 4.

although the impact would be the highest in PO2 (EUR 2.4 billion, expressed as present value over 2025-2050), followed by PO3 (EUR 0.5 billion), PO4 (EUR 0.05 billion) and PO1 (positive but not quantified)[99].

Table 5: Reduction in the external costs of accidents, present value over 2025-2050 (in million EUR), in 2021 prices

	Baseline	Difference to the Baseline			
		PO1	PO2	PO3	PO4
Total fatalities and injuries	4,664	+	2,397	522	46
Fatalities	1,627	+	187	33	0
Injuries	3,037	+	2,210	489	46

Source: VVA et al. (2023), Impact assessment support study; Note: '+' stands for a positive impact that was however not possible to quantify. The measure leading to this positive impact is included in all options.

It should be noted however that there is high uncertainty regarding these estimates. This is because the impacts of the Directive on safety are indirect, through inspections that are aimed to address ship deficiencies and work in a preventive way. For this reason, a sensitivity analysis has been performed, assuming 10% and 15% lower value in absolute terms of the elasticity used to derive the impacts. Table 6 shows that even with lower value of the elasticity PO2, PO3 and PO4 are projected to result in lives saved and injuries avoided, although the positive impacts on safety would be more limited.

Table 6: Results of the sensitivity analysis on the reduction in the external costs of accidents, expressed as present value over 2025-2050 (in million EUR) relative to the baseline

	Difference to the Baseline			
	PO1	PO2	PO3	PO4
Reduction in external costs of accidents (in million EUR)				
Elasticity - central case	+	2,397	522	46
Elasticity - 10% lower	+	2,163	479	39
Elasticity - 15% lower	+	2,042	454	33

Source: VVA et al. (2023), Impact assessment support study; Note: '+' stands for a positive impact that was however not possible to quantify. The measure leading to this positive impact is included in all options.

6.2.2. Impacts on working conditions and skills

The impact of the policy options on working conditions is expected to be positive, although it has not been possible to quantify it. By improving safety, the policy options will result in saved lives (of persons on board but in particular of crew), avoid injuries and improve the attractiveness of employment in the sector.

The impact is expected to be higher in PO2, followed by PO3, PO4 and PO1. In addition, the knowledge sharing and training organised by EMSA will improve the skills of flag State inspectors in light of new developments which may be relevant for such inspections in the future, including but not limited to renewable and low carbon fuels, automation and autonomous shipping, if and when they are included among statutory tasks in the international conventions e.g. SOLAS and MARPOL with responsibilities on the flag State.

[99] The 2019 Handbook on the external costs of transport has been used to monetise the costs. According to the Handbook, the external costs of a fatality in 2021 prices is estimated at around EUR 3.6 million and that of an injury at around EUR 0.5 million.

6.2.3. Impacts on fundamental rights

The policy options were assessed to determine if they have an impact on the fundamental rights and/or equal treatment of EU citizens. The starting point of the assessment of the fundamental rights is the Charter of Fundamental Rights of the European Union[100]. All POs were assessed having regard to the relevant EU instrument and it was concluded that they maintain full respect for human and fundamental rights and none will have any negative impact thereon.

6.3. Environmental impacts

The impact of the policy options on the environment is also an indirect one. It depends on the flag State inspections, as explained in section 6.2.1, that are expected to lead to a higher level of compliance over time and a reduction in accidents and pollution. The EU RO monitoring oversight programme (PM7), included in all options, also allows Member States to share findings identified in such monitoring in a systematic manner and, as a consequence, provide higher leverage towards ROs in taking corrective action. The environmental impact of maritime casualties derives from ships sinking, cargoes lost and oil spills (either as cargo or from bunker fuels). While there has not been a single significant oil spill similar to that of the Erika (1999) or Prestige (2002) accidents in EU waters for almost 20 years, the possibility of such an incident is nonetheless present and has to be mitigated against. Similarly and in the context of the European Green Deal and the "Fit for 55" package, it is likely that there will be a significant change in ship propulsion and fuels used in the coming decades. This will have implications for the entire shipping industry and can be expected to have an impact on the way flag State inspections are conducted.

Furthermore, 13 cases of pollution due to bunker fuel lost were recorded in 2019 for EU Member States flagged vessels. In the baseline scenario, the cumulative number of tonnes of bunker fuels lost between 2025 and 2050 is estimated at 14.9 thousand. PO2 would result in 1,418 tonnes of bunker fuel lost avoided during 2025-2050 relative to the baseline, followed by PO3 (321 tonnes of bunker fuel lost avoided) and PO4 (31 tonnes of bunker fuel lost avoided). The impact of PO1 is expected to be positive although more limited, driven by the EU Oversight programme of flagged fleet and RO's[101]. This is expected to positively impact on the quality of marine water and on biodiversity. Thus, all policy options contribute towards Sustainable Development Goal 14 ("Conserve and sustainably use the oceans, seas and marine resources for sustainable development"), although the positive impact of PO2 is the highest.

No significant harm is expected on the environment in any of the policy options, in particular in the area of sustainable use and protection of water and marine resources to which the initiative relates. On the contrary, as explained above, all policy options are expected to have small positive impacts on the quality of water and biodiversity – with the highest impact among the three projected in PO2. All policy options are consistent with the environmental objectives of the European Green Deal and the European Climate Law[102].

[100] OJ C 326 of 26.10.2012 p.2

[101] The impact of the EU Oversight programme of flagged fleet and RO's (included in all options) on the tonnes of bunker fuels lost avoided was not possible to quantify.

[102] Regulation(EU) 2021/1119

7. HOW DO THE OPTIONS COMPARE?

7.1. Effectiveness

The assessment of effectiveness looks at the extent to which the general and specific objectives (SO) of the intervention, as previously described, are met. Table 7 provides the link between policy objectives and assessment criteria. More detailed explanations are provided in Annex 16.

Table 7: Link between objectives and assessment criteria

General objectives	Specific objective	Assessment criteria
The general objectives are: (i) to maintain a level playing field and avoid market distortions, (ii) to ensure high levels of maritime safety (iii) to ensure prevention of maritime pollution	**SO1** - Align the Flag State Directive with new international rules	Expected improvement in clarity and functioning of the internal market
	SO2 – Ensure adequate inspections and monitoring/oversight	Changes in the number of fatalities and injuries involving EU Member States flagged vessels Changes in the number of tonnes of bunker fuel lost at sea involving EU Member States flagged vessels[103] Percentage of fleet inspected per year split by exclusive and non-exclusive staff
	SO3 - Ensure higher uptake of digital solutions	Number of EU-flagged vessels covered by the e-certificate registry system Number of e-certificates for EU-flagged vessels Number of inspections that would benefit of the e-FS inspection reports system
	SO4 - Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties	Increased compliance and convergence in the application of the rules between EU Member States flagged fleets

Concerning **SO1**, all policy options ensure full alignment of the Directive with the III-Code, including the IMO Audit. This will provide for a more consolidated reflection of the III-Code into the EU law, 'close' any gaps and ensure its enforceability. This will thereby strengthen the safety net across the Union, improve harmonisation and the functioning of the internal market. All four options are equally effective at achieving SO1.

Concerning **SO2**, PO2 would be the most effective due to the specific requirements regarding inspections commensurate with the size and type of fleet, combined with conditions on the use of non-statutory staff, with the largest positive effects on safety and protection of marine environment (69 lives saved and 810 injuries avoided; 1,418 tonnes of bunker fuel lost avoided during 2025-2050 relative to the baseline). PO2 is also the most balanced option in addressing SO2 in that it both strengthens the control and compliance while at the same time it does not deter the use of non-statutory staff. The flag State administrations are in favour of having some flexibility and focusing on the quality of the work rather than on the status of the person doing

[103] The indicator 'tonnes of bunker fuel lost at sea', that are also measurable, was chosen as the whole approach is about preventive action and illustrative of the severity of pollution and damage to the environment, while the indicator 'number of fatalities' for the human dimension of the accidents, when they happen. The underlying logic in the FS Directive is that a better oversight of the fleet protects against the risk posed by substandard ships flagged in the EU and hence is expected to lead to a reduction in the number of accidents/incidents. In particular, they capture the impacts of most measures that are different between options, related to the frequency of flag State inspections and surveys.

the work. PO3 is less effective than PO2 in addressing SO2, resulting in 11 lives saved and 180 injuries avoided, and 321 tonnes of bunker fuel lost avoided during 2025-2050 relative to the baseline. PO3 requires flag State administrations to do the International Safety Management (ISM) audit and issue ISM Certificates, combined with a number of inspections to be performed. It however also prevents the use of non-statutory staff which provides less flexibility for flag State administrations. PO4 and PO1 are less effective than both PO2 and PO3 in achieving SO2. They also offer less flexibility for flag State administrations with regard to non-statutory staff.

Concerning **SO3**, PO2 and PO3 are the most effective in terms of enforcement costs savings for flag State authorities due to the uptake of digital solutions (EUR 48.8 to 52.9 million savings relative to the baseline, expressed as present value over 2025-2050, for PO2, and EUR 48 to 51.3 million savings relative to the baseline for PO3). PO1 and PO4 are slightly less effective than PO2 and PO3 (EUR 47.7 to 50.8 million savings relative to the baseline). The difference between the options in terms of enforcement costs savings stems from the synergies between the measures on digitalisation and other measures included in the options that contribute towards SO2 (i.e. requirements regarding inspections commensurate with the size and type of fleet included in PO2 and the requirement to do the International Safety Management audit and issue ISM Certificates, combined with a number of inspections to be performed, included in PO3). Requiring the reporting, sharing and use of electronic certificates allows increased efficiency both for flag State inspectors and port State control inspectors performing inspections on board of the ships. With regard to adjustment costs savings for ship operators due to the uptake of digital solutions, PO2 is slightly more effective than PO1, PO3 and PO4 (costs savings are estimated at EUR 0.6 to 1.2 million in PO2, EUR 0.5 to 1 million in PO3 and EUR 0.4 to 0.9 million in PO1 and PO4). Again, the difference between the options stems from the synergies between the measures on digitalisation and other measures included in the options that contribute towards SO2.

Concerning **SO4,** all policy options require the establishment of a flag State expert group, comprising MS experts involved in inspections of the flagged fleet and monitoring of RO's, that will be instrumental in developing the EU oversight programme, the reporting (what and how) from such work, the discussion of the results of such work and, where needed, adjustments to the common training programme (post qualification). The group and the MS experts will benefit from the digital solutions and the sharing of information for focused inspections, possibly even sharing of burden and use of expertise across MS. The modernisation of the way to measure performance of flag States, enabling continuous improvement is also common across options, contributing to meeting SO4. That also allows for transparency and a certain peer review. It will (as the experience with port State control shows) lead to better understanding of the rules and more harmonised approach so that in the end it should not matter, from a safety point of view, under which EU MS flag a ship sails. They should all be subjected to the same control and ensure compliance, leading to quality shipping. All four options are equally effective at achieving SO4.

With regard to expected synergies or complementarity with the parallel initiatives on port State control and accident investigations – these are explicit in their complementary set up (as required under international law) given that inspections in the context of FS Directive can only be performed on the Member State own flag whereas under port State control they cover all flags but the own flag. If EU Member States can (using digital

tools) better police their own flagged fleet and better follow up on negative findings from port State control inspections of their flagged ships they should be able to improve quality and safety[104].

Furthermore, for the digitalisation measures, there are clear synergies in that one and the same IT system, hosted in EMSA and in part already operational, will be used for sharing the relevant reports stemming both from the FS Directive and port State control Directive, and thereby enrich both. This ensures complementarity and allow for increased efficiency in preparing for and executing any type of inspection as well as more pertinent information, both port and flag State reports, on which to base monitoring of flagged fleet and any RO working on behalf of the flag State.

7.2. Efficiency

Efficiency concerns "the extent to which objectives can be achieved for a given level of resource/at least cost". The major costs of the policy options come in the form of adjustment costs for flag State authorities and for EMSA. They are summarised in Table 8 below.

PO2 leads to the highest total costs among the four policy options, estimated at EUR 59.2 to 60.5 million in addition to the baseline costs, expressed as present value over 2025-2050. The highest total costs in PO2 are the adjustment costs for flag State authorities, followed by the adjustment costs for EMSA. Around 54% of the adjustment costs for flag State authorities are linked to the specific requirement regarding inspections commensurate with the size and type of fleet, and 46% with the implementation of digital solutions (see section 6.1.1). The adjustment costs for EMSA are linked to the implementation of digital solutions, capacity building and harmonised training (post-qualification) for Flag State inspectors/surveyors/auditors and are the same in all options. PO3 shows slightly lower costs than PO2, estimated at EUR 55.5 to 56.8 million in addition to the baseline costs, expressed as present value over 2025-2050. The highest cost categories are the same as in PO2. Around 47% of the adjustment costs for flag State authorities are linked to the implementation of digital solutions, 43% of the costs with the requirement to do the International Safety Management audit, combined with a number of FS inspections to be performed, and 10% with the measure preventing the use of non-exclusive technical staff (see section 6.1.1). PO4 and PO1 show lower total costs, estimated at EUR 34.9 to 36.1 million in addition to the baseline costs for PO4 and EUR 34.5 to 35.7 million for PO1.

Table 8: Summary of costs and benefits of policy options – present value for 2025-2050 compared to the baseline (in million EUR), in 2021 prices

	Difference to the Baseline			
	PO1	**PO2**	**PO3**	**PO4**
Flag State administrations				
Adjustment costs	27.4	48.9	47.7	27.8
Enforcement costs	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3
Enforcement costs savings	47.7-50.8	48.8-52.9	48-51.3	47.7-50.8
EMSA				
Adjustment costs	6.4-7.0	6.4-7.0	6.4-7.0	6.4-7.0
European Commission				
Adjustment costs	0.6-1.1	0.6-1.1	0.6-1.1	0.6-1.1

[104] In addition, the initiatives on port State control and accident investigations also cover fishing vessels which are beyond the current scope of the flag State Directive and its proposed revision.

	Difference to the Baseline			
	PO1	PO2	PO3	PO4
Ship operators				
Adjustment costs		3.2	0.7	
Adjustment costs savings	0.4-0.9	0.6-1.2	0.5-1	0.4-0.9
Reduction in external costs of accidents				
Fatalities and injuries	+	2,397.3	522.4	45.9
Total costs	34.5-35.7	59.2-60.5	55.5-56.8	34.9-36.1
Total benefits	48.2-51.7	2,446.7-2,451.4	570.8-574.6	94.1-97.6
Net benefits	13.7-16.0	2,387.4-2,390.9	515.3-517.8	59.2-61.5
Benefit to cost ratio	1.4-1.4	41.3-40.5	10.3-10.1	2.7-2.7

Source: VVA et al. (2023), Impact assessment support study; Note: '+' stands for a positive impact that was however not possible to quantify. The measure leading to this positive impact is included in all options.

In terms of total benefits, PO2 shows the highest benefits among the four policy options mainly due to the reduction in the external costs of accidents. Total benefits, including enforcement costs savings for flag State authorities and adjustment costs savings for ship operators, are estimated at EUR 2,446.7 to 2,451.4 million relative to the baseline, expressed as present value over 2025-2050. PO3 shows lower benefits than PO2, estimated at EUR 570.8 to 574.6 million, while PO1 is estimated to result in the lowest benefits of the four options (EUR 48.2 to 51.7 million). The impact of the avoided pollution due to the tonnes of bunker fuel lost has not been monetised but also in this case the highest benefits are projected in PO2, as shown in section 6.3.

All policy options result in net benefits. The net benefits are largest in PO2, estimated at EUR 2,387.4 to 2,390.9 million relative to the baseline, expressed as present value over 2025-2050, followed by PO3 (EUR 515.3 to 517.8 million), PO4 (EUR 59.2 to 61.5 million) and PO1 (EUR 13.7 to 16 million). PO2 also shows higher benefits to costs ratio (41.3 to 40.5) relative to PO3 (10.3 to 10.1), PO4 (around 2.7) and PO1 (around 1.4).

Considering the sensitivity analysis on the impacts of the policy options on external costs of accidents, provided in section 6.2.1, the net benefits and the benefit to cost ratio have been calculated for each case and are provided in Table 9. The table shows that even with lower values of the elasticity, all policy options would still result in net benefits and PO2 would result in the highest benefit to cost ratio, followed by PO3.

Table 9: Results of the sensitivity anaysis on net benefits and benefit to cost ratio of policy options

	Difference to the Baseline			
	PO1	PO2	PO3	PO4
Net benefits (in million EUR)				
Elasticity - central case	13.7-16.0	2,387.4-2,390.9	515.3-517.8	59.2-61.5
Elasticity - 10% lower	13.7-16.0	2,153.4-2,156.9	471.9-474.4	52.1-54.4
Elasticity - 15% lower	13.7-16.0	2,031.7-2,035.2	446.9-449.4	46.2-48.5
Benefit to cost ratio				
Elasticity - central case	1.4-1.4	41.3-40.5	10.3-10.1	2.7-2.7
Elasticity - 10% lower	1.4-1.4	37.4-36.7	9.5-9.4	2.5-2.5
Elasticity - 15% lower	1.4-1.4	35.3-34.7	9-8.9	2.3-2.3

Source: VVA et al. (2023), Impact assessment support study

7.3. Coherence

Internal coherence. The internal coherence concentrates on how the different elements within the Directive work together to achieve the objectives. It should be noted that this does not only concern the Directive itself, but also its accompanying secondary legislation (delegated and/or implementing acts) and rules as well as guidelines. Although all policy options address the identified problems, they do so in different ways. PO1 addresses the problems and objectives in such a way that room for flexibility remains, meaning that while there is alignment with the international instruments the approach for inspections is left to the MS, but prohibits the use of non-exclusive staff. PO2 allows similar flexibility but requires some harmonisation in terms of requirements for inspections to be commensurate with the size and type of flagged fleet. PO3 and PO4 would require Member States to 'take back' some statutory surveys, to be carried out directly by exclusive flag State experts. This ensures a better control for any vessel wishing to transfer into the flag. All options ensure internal coherence.

External coherence. The external coherence concentrates on the compliance of the Directive with key EU policy objectives and international legislation these are explicit in their complementary set up (as required under international law). Revising the Directive and aligning it with the most up-to-date IMO provisions ensures a modern harmonised approach.

The main rationale is the obligation to respect the established structure of *first and second line of defence*, (as described in section 1 under synergies with other EU policy instruments) involving responsibilities of a Member State as flag State and port State respectively. That structure is laid down in by the United Nations Convention on the Law of the Sea (UNCLOS) and further detailed in the international conventions. Like all EU Member States, the Union itself is a party to UNCLOS, and therefore bound to respect it. As such, the FSD revision will be coherent with the revision of the PSC Directive as well as the Accident Investigation Directive and will continue to ensure consistency, as also required by the III-Code. As all policy options seek alignment with the current international legal regime, external coherence will be guaranteed in all options. Furthermore, all policy options are consistent with other EU legislation in the area of maritime safety, including the legislation governing the use of Recognised Organisations. The use of ROs is a choice and not an obligation that a flag State may exercise. However, it does not shift any responsibility for the flagged fleet away from the flag State. Where the flag States retain statutory survey in full or in part, they are perfectly legit to do so under both the Flag State and RO legislation.

Coherence with the EU's high-level objectives. All policy options are in line with the EU's objectives to ensure a safe, secure and efficient transport as set out in the Sustainable and Smart Mobility Strategy and contribute – although to different extents – to the milestone of bringing close to zero the death toll for all modes of transport in the EU by 2050. Similarly, all policy options are consistent with the specific Council conclusions on maritime transport of 2017 and 2020, respectively. Since damage to or involving ships could lead not only to loss of human lives, but also to severe pollution, ultimately all policy options are aligned with the environmental objectives of the European Green Deal – and contribute to the aim for 'Zero Pollution for Air, Water and Soil Action Plan'.

7.4. Subsidiarity and proportionality

As highlighted in section 3.2 there is a clear need for EU action on all the problems identified, and their drivers. There is a need for EU action to avoid a fragmented legal framework. The current Directive needs to fully incorporate and align with new international mandatory rules. In addition, weaknesses identified during IMO audits and confirmed during the stakeholders' consultations process have shown that flag State

inspections and oversight are not always systematic or being carried out in the most efficient manner, notably as regards the use of electronic certificates. Member States individually are not able to tackle all the problems identified. As such, there is a need for the EU to act. As all policy options ensure harmonisation of the legal framework, the subsidiarity requirement is fulfilled. In any event, as stated in section 3.2, the principle of subsidiarity does not apply to areas subject to EU exclusive competence pursuant to Article 3(2) TFEU.

In relation to proportionality, the objectives are achieved by improving the way that flag State inspections and RO monitoring are carried out to ensure compliance of flagged ships with requirements. That is the first line of defence in maritime safety. PO2 contributes to the objectives through specific requirements regarding inspections, commensurate with the size and type of fleet.

All policy options require the uptake of digital solutions. In particular the requirement for flag State administrations, or ROs on their behalf, to report and share electronic certificates provides an incentive for flag States to make the digital move. This will also enable synergies with the port State control, as it will allow more information sharing and better preparation for inspections, and more efficient use of resources.

During the stakeholder consultation, it became clear that resources, or rather shortage of resources, is an issue shared across Member States and they advocated some flexibility. At the same time they supported the digitalisation and saw it as a pre-requisite for both enhanced monitoring and control, and for ensuring competitiveness. The need for incorporating and fully aligning with the obligations now mandatory under the III-Code was not questioned. Stakeholders welcomed the cooperation measure and the further sharing of information.

8. PREFERRED OPTION

8.1. Identification of the preferred policy option and stakeholders views

Although each of the options addresses the problems identified, their drivers and the specific objectives, some options are more effective in achieving the specific and general objectives. Based on the assessment done, all options are equally effective in addressing SO1 and SO4. PO2 is regarded as the most effective in addressing SO2, while PO2 and PO3 are equally effective in addressing SO3 and more effective than PO1 and PO4.

With respect to efficiency, PO2 has the highest additional costs, followed by PO3, PO4 and PO1. When linking costs to benefits, PO2 also yields the highest benefits in terms of improving maritime safety and thus monetised benefits, in terms of enforcement cost savings for the flag State authorities and adjustment costs savings for ship operators. As the additional benefits outweigh the additional costs and yield the highest benefit to cost ratio, PO2 is seen as the most efficient of the options proposed. None of the options leads to excessive costs in achieving the objectives set.

All options ensure internal coherence. External coherence is guaranteed for all policy options as they all seek alignment with the current international legal regime.

The subsidiarity requirement is fulfilled for all options as they all ensure harmonisation of the legal framework. However, PO2 is seen as more measured[105] and proportional than PO1, also in relation to the

[105] In the consultations Member States flag administrations listed a number of concerns as to the competitiveness of their flag. In the recent discussions for the sanctions measures in relation to the Russian invasion of Ukraine this has also been brought forward over and again.

great variation in size and type of fleet among the EU Member States flagged fleet, while contributing more towards the objectives than PO3 and PO4 as increased resources do not automatically mean the flag administrations will be able to attract and employ the right expertise.

Stakeholder consultations showed that flag State administrations, who are directly affected by the FSD, are in favour of a clear, coherent and aligned legal framework that is incorporating and consolidating the mandatory international rules. Industry stakeholders had the same view. Flag State authorities are in favour of increasing the use of electronic certificates and for sharing them both with other EU Member State flags as well as with port State control. Flag State administrations and stakeholders also supported the areas identified for further harmonisation, in particular when it comes to an effective EU RO oversight programme and harmonised capacity building leading to uniform flag State inspections, using EMSA as the vehicle, for enhanced and more common understanding. Many pointed out that this has already happened in port State control and flag State control should follow a similar path. At the same time the EU Member States with the biggest fleets (the top 6 flagged fleet making up 71% of the entire EU Member States flagged fleet) have advocated for a measured approach to avoid creating a competitive disadvantage for their flags in the international context.

On the basis of the analysis above, also considering the measured approach between upholding a quality fleet and costs involved, it can be concluded that PO2 is the preferred policy option.

8.2. REFIT

This initiative is part of the Commission Work Programme 2021 under Annex II (REFIT initiatives), under the heading Promoting our European Way of Life[106]. It has an important REFIT dimension in terms of alignment and simplification of maritime safety legislation, and of enhanced assistance to Member States flag authorities to effectively and consistently discharge their inspection functions and hence their international law obligations, leading to improved compliance of flagged fleet.

While more inspections will have to be carried out, this has to be seen against the simplification and improvement that will accrue from the digitalisation of inspection reports and the reporting, use and sharing of electronic certificates. The preferred policy option results in enforcement costs savings for the flag State authorities estimated at EUR 48.8 to 52.9 million, expressed as present value over 2025-2050 relative to the baseline and adjustment costs savings of EUR 0.6 to 1.2 million for ship operators.

The preferred policy option includes elements of simplification such as:

- The provision by EMSA of assistance to flag State authorities with training on how to carry out flag State inspections in a more harmonised way, and the provision of a dedicated flag State inspection database to target and select vessels for inspection and to record and share the results of the flag State inspections.
- EMSA will assist Member States regarding the use of electronic certificates. This will involve the provision of a common data model, a validation tool and sharing certificates (in the same way as for port State control).
- EMSA training of flag State administrations staff on technological and regulatory developments as well as on issues arising from renewable and low carbon fuels and other developmens arising from the European Green Deal as well as issues arising from the enforcement of new international Conventions.

[106] COM(2020) 690 final

8.3. Application of the 'one in, one out' approach

As explained in section 6.1.2, the preferred policy option is not expected to result in additional administrative costs for the private sector, or for the citizens. On the other hand, the uptake of digital solutions required by the preferred policy option is expected to lead to adjustment costs savings of EUR 0.6 to 1.2 million, expressed as present value over 2025-2050 relative to the baseline, while the specific requirement regarding inspections commensurate with the size and type of fleet to adjustment costs of EUR 3.2 million. The net costs for the private sector are estimated at EUR 2 to 2.6 million, expressed as present value over 2025-2050 relative to the baseline (in 2021 prices). The preferred policy option is also expected to result in benefits in terms of improved safety. The benefits in terms of improved safety overcompensate the costs for the industry (i.e. shipowners/operators).

9. HOW WILL ACTUAL IMPACTS BE MONITORED AND EVALUATED?

The Commission services will monitor the implementation and effectiveness of this initiative through a number of actions and a set of core indicators that will measure progress towards achieving the operational objectives.

Actions foreseen for verifying implementation include:

- Visits to Member States to verify operations on the ground, carried out by EMSA on behalf of the Commission. The respective visits reports will identify any shortcomings and areas for improvement.
- Commission/EMSA participation as observers in the IMO, complementary to EMSA's visits and inspections on behalf of the Commission, including the horizontal analysis required[107] to be carried out by EMSA (giving an indication of how the legislation is functioning and identifying gaps and what can be done to address them) and reported to the Commission and Member States (discussed in workshops).
- Establish the flag State expert group.

The core set of indicators for monitoring the impacts of the initiative, linked to the operational objectives will include:

Operational Objectives	**Indicators**	**Source of data**
Ratification of IMO Instruments	Number put into effect	IMO GISIS
Availability of adequate technical resources	Number of technical staff Number of inspections Share of inspections for the MS flagged fleet Number of flag State inspectors/ship	EMSA DONA system

[107] EMSA Regulation Article 3.5

Outcome of flag State inspections/RO oversight	Number of flag State inspection reports shared Use of findings Follow-up with ROs Safety recommendations Number of vessels accepted onto Flag registers Number of vessels suspended or deleted from Flag registers	Flag State module in THETIS system Flag State administrations reports Central Ship Database (data base hosted in EMSA)
Take up of digitalisation	Number of e-Certificates Number of e-Flag State reports	Flag State module in THETIS system (hosted in EMSA)
Indications from revised (Art 8.2) performance measurement system	As per performance measurement indicators	performance measurement system

ANNEX 1: PROCEDURAL INFORMATION

1. LEAD DG, DECIDE PLANNING/CWP REFERENCES

The lead DG is DG MOVE, Unit D2: Maritime Safety

DECIDE reference number: PLAN/2019/5434

Item 36 in Annex II to Commission Work Programme 2021: Promoting our European Way of Life[108].

1. ORGANISATION AND TIMING

The impact assessment follows the ex-post evaluation of the flag State Directive performed as part of the overall maritime transport policy fitness check in 2018. The impact assessment started in 2020, with inception impact assessment published on 9 October 2020[109].

The impact assessment on a possible review of the Flag State Directive was coordinated by an Inter-Service Steering Group (ISSG). The Commission Services participating in the ISG are: Secretariat-General, Legal Service, DG Maritime Affairs and Fisheries, DG Climate Action, DG Migration and Home Affairs, DG for Employment, Social Affairs and Inclusion, DG Industry, Entrepreneurship and SMEs, DG Environment, DG Health and Food Safety, DG Structural Reform Support, and the European Maritime Safety Agency (EMSA).

The Inter-Service Steering Group met on 22 January 2021, 3 March 2021, 15 October 2021, 24 March 2022 and 12 January 2023. It was consulted throughout the different steps of the impact assessment process: notably on all stakeholder consultation materials and deliverables from the external contractor and on the draft Staff Working Document.

2. CONSULTATION OF THE RSB

The draft report was discussed by the Board on 15 February 2023, which issued a positive opinion with reservations. The Board asked that two main aspects are rectified in the final impact assessment report, which are explained in the table below:

RSB recommendations	Modification of the IA report
(1) The scale of the problems is not sufficiently clear, and the supporting evidence is missing, in particular concerning non-exclusive technical staff.	Section 2.1 has been further clarified. Further exmaples and supporting evidence has been included for problem 1. In Section 2.2 the descrtiption of problem driver 2 has been further improved with evidence concerning non-exclusive technical staff. Furthermore a a new section discussing the level playing field aspect has been added to section 2.3.
(2) The report does not clearly present the key policy choices, the different combinations of measures	In Section 5.1 futher clarifications have been included. Table 1 in section 5.2 was improved to include also links to problem drivers.

[108] COM(2020) 690 final

[109] Compliance with Flag State requirements (shipping) (europa.eu)

regarding inspections and how these compare in terms of effectiveness.	Additional inmformation further explaining the difference between policy measures has been introduced. In section 7.1, table 7 was reviewd and additional assessemnt criteria introduced. In section 7.3 the external choerence was further clarified and improved and Annex 14 updated. A new text section was introduced explaining the synnergies and complimentarity between the flag sate, the port State control and accident investigation intitiatives. Annex 15 was moved into the body of the text of section 9 to provide further clarity.

3. EVIDENCE, SOURCES AND QUALITY

The impact assessment is based on several sources, using both quantitative and qualitative data. This includes:

- Ex-post evaluation of the flag State Directive
- Maritime fitness Check 2018
- Stakeholder consultation activities (see Annex 2)
- External support study carried out by an independent consortium (lead by VVA, supported by WMU and admaris)
- Commission's experience in monitoring and implementing the Directive
- Various Union wide data bases hosted and managed by EMSA.

ANNEX 2: STAKEHOLDER CONSULTATION

This annex provides a summary of the outcomes of the consultation activities which have been carried out for the review of Directive 2009/21/EC on compliance with flag State requirements, including in the context of the external support study. It notes the range of stakeholders consulted, describes the main consultation activities and provides a succinct analysis of their views and the main issues they raised. It is to be noted from the outset that the FSD addresses maritime administrations and the direct impact is on them as they have the obligation to ensure international rules and regulations are implemented and enforced. That is the premise of maritime safety and the first line of defence (as explained in section 1).

The consultation strategy was developed from the start of the project and included as key stakeholders the following groups: Member States maritime authorities (both as flag and port States), third country flag State administrations, IMO, US Coast Guard, Recognised Organisations (and umbrella organisation IACS[110]), Shipowners (and umbrella organisation ECSA[111]), Ports (and umbrella organization ESPO[112]), Unions (e.g. ETF, European Transport Workers Association, EuroPeche) and individual experts. The work was in part done together with the consultations for the possible revision of the accident investigation Directive and the port State control Directive.

The objective of the consultation activities were to collect information and opinions of stakeholders on the key problems and associated drivers, definition of relevant policy objectives linked to those problem areas and the identification, definition and screening of policy measures that could eventually be incorporated into policy options for this impact assessment report, as well as gather information and opinions on their likely impacts.

1. Overview of consultation activities

Consultation activities have taken place since the publication of the Inception Impact Assessment in October 2020 and continued until autumn 2022, with the bulk of consultations taking place in 2021.

The main consultation activities included:

- Four scoping interviews were conducted between March and April 2021 with EU level representatives of key stakeholders, particularly to support and refine the overall problem definition and possible policy options.
- Twenty three targeted interviews were carried out by the consultant in charge of the external support study to the Impact Assessment between April and September 2021, with the following stakeholder categories: national authorities (19), industry representatives (3), experts (1).
- A targeted survey was organised by the consultant in charge of the external support study to the Impact Assessment, running between December 2021 and February 2022, addressing both national administrations and industry stakeholders categories. The survey included additional data requests on cost estimations.

[110] IACS, International Association of Classification Societies, https://iacs.org.uk/
[111] ECSA, European Community Shipowners' Associations, https://www.ecsa.eu/
[112] ESPO, European Seaports organisation https://www.espo.be/

- An additional targeted request for data and statistics, especially as regards flag State inspectors and number of inspections was carried out in September 2022.
- A Workshop was organised on 18 February 2021 with EMSA, to gather an overview of performance of Member State flags, data available on flagged fleet etc., as well as the Agency's involvement in the implementation of the Directive.
- A dedicated Workshop took place on 21 October 2021 with Flag State administrations (17) and representatives of the sector (8) – ship owners, classification societies, ports organisations, workers' representatives, which covered possible changes in measuring flag State performance (the paradigm shift in KPIs from fleet to governance).
- A final workshop was organised on 20 January 2022. The event was divided into two sessions with different stakeholder groups – one with flag State authorities in the EU Member States (23 Member States represented) and one with maritime industry stakeholders. The workshop focused specifically on gathering views on the final version of policy measures, as well as on the assessment of the various impacts.
- Additional consultation activities organised by DG MOVE and the consultant in charge of the external support study to the Impact Assessment in order to consult the Member States and key stakeholders by providing their views on the different policy measures but also to validate the emerging and final results of the support study to the Impact Assessment in terms of the quantification of the impacts. These activates took place in the context of an informal meeting of the EU/EEA Maritime Transport Directors (30 November 2021) and meetings of the EU Committee on Safe Seas and the Prevention of Pollution from Ships (17 May 2021, 11 November 2021 and 31 May 2022). All confirmed the need to align with IMO rules (III-Code).
- Bilateral discussions with both member States (DK) and Industry (IACS, ESPO, INTERTANKO[113]) in the autumn 2022 (August-October), at their request. They expressed overall support, mostly focussing on the digitalisation aspects and the need to include this in the preferred policy choice, but not via too strict 'standards'; IACS raised a concern regarding the approach to shift statutory surveys back to flag States (in terms of safety impact).

The information collected from stakeholders was key in allowing the Commission to refine the design of the policy options as well as to assess their economic, social and environmental impacts, compare them and determine which policy option is likely to maximize the benefits/costs ratio for the society and fully contribute to achieving a measured but more effective and efficient flag State control ensuring compliance. The consultations also supported the Commission in gauging how to consider a measured approach that would maximize safety but minimize the risk of putting EU MS flags at a competitive disadvantage risking flagging out from EU MS flags to third country flags.

Findings from those processes complemented the desk research carried out in the context of the external support study.

Limitations of the Stakeholder consultation

Not all stakeholders were very responsive to the various targeted consultation activities (slow responses or incomplete answers, refusal to participate). However, since all relevant stakeholder groups have provided their views and positions to the various targeted consultations, a meaningful comparison and analysis of opinions gathered from all consultation activities was nevertheless possible.

[113] The International Association of Independent Tanker Owners, https://www.intertanko.com/

Overall, 70% of the flag State administrations took part in at least one consultation activity. While this is not problematic for Austria and Slovakia which do not have a register or a flagged fleet, the fact that some large flag States such as Malta and Portugal have not provided, or only provided very limited, views or information related to the initiative, is a limitation.

It was particularly difficult to gather input from stakeholders on costs, notably existing costs imposed by the application of the Directive – since this is often not disentangled from the budget allocated to Port State Control or Accident Investigation - and possible expected costs of implementing the proposed measures.

2. Methodology

A mixed methods approach has been adopted to conduct the targeted stakeholder consultation activities, which have taken place gradually throughout the implementation of the impact assessment support study. This allowed to capture and fill in data gaps along the study process and ensure synergies and evidence-build up for the different study tasks. Methods have been adapted to take account of the development of the COVID-19 pandemic. For this reason, interviews and meetings have been held by videoconference.

It is to be noted that an exemption was granted from carrying out an Open Public Consultation (OPC) in relation to this Impact Assessment, as previous experience with the ex-post evaluation and the Maritime Fitness Check proved that such a technical topic would yield little interest from the general public. The general public was nevertheless offered the opportunity to provide any views on this initiative, via an announcement on DG MOVE web page[114] and a dedicated functional mailbox.

One contribution was received from a shipowner association, which stated that it supported the initiative on flag State Directive as it aims to align with mandatory international rules but raised concerns as regards the approach to prohibit the use of non-exclusive flag State inspectors/surveyors. While agreeing such staff should have no conflict of interest, never do any statutory work, be trained and fall under the reporting requirements of the flag State, it argued that certain inspections could beneficially be performed by such staff, as it is not the status of staff that is important but the skills and quality of work they can provide.

2.1. Feedback on the Inception Impact Assessment

As part of the initial feedback mechanism, stakeholders had the opportunity to provide feedback on the Inception Impact Assessment between 9 October 2020 and 20 November 2020. 4 replies were received from Member States (1), non-governmental organisation (1), workers' representatives (1), business association (1).

2.2. Targeted consultations[115]

Targeted interviews were conducted and an online targeted survey was distributed. Both the interviews and the survey were aimed at a range of relevant stakeholders representing public authorities and other public bodies (national authorities in EU, EEA and third countries, EU and international bodies) and industry representatives (including relevant associations of shipowners, port operators and seafarers). The interviews and surveys focused on obtaining detailed input on the expected impacts (economic, social and environmental) of the measures under consideration in comparison to the baseline, the possible issues that

[114] Maritime safety – three directives under review (europa.eu)

[115] An effort was made by all three contractors doing the IA support Studies for the AID, PSC and FSD to synchronise consultations and to avoid duplication where possible

may arise and identifying the level of support for specific measures. Where relevant, stakeholders were asked for input on the cost implications of each measure.

It is to be noted that out of the 27 EU Member States not all have a register or convention ships registered on their register. Overall, out of the 22 Member States with a register and fleet, 19 flag State administrations took part in the consultation through the targeted interviews, 21 attended the workshop on the performance criteria (paradigm shift) and all attended the final validation workshop (plus 1 Member State with no register).

Table 10: Number of participating stakeholders

Stakeholders	Scoping interviews	Targeted interviews	Online survey	Workshop on performance criteria	Final validation workshop
Flag State administrations	1	19	16	21	23 EU MS, US Coast Guard as well as IMO, all in all 38 participants
Sector associations/industry	3	3	6	10	44
International institutions and EU agencies		1		6	6
Experts		1		1	

The full list of stakeholders consulted is included in the external support study[116].

3. Analysis of the results of the stakeholder consultation

The remainder of the annex presents the main findings from the analysis of stakeholder contributions to the consultation process. They are structured around the main elements of the intervention logic, including the problem areas and their drivers, the policy objectives as well as the key aspects of the design of possible policy measures. The technical support study for this Impact Assessment contains the detailed presentation of findings from the targeted consultation activities.

3.1. Problem areas and policy objectives

The shortcomings of the FSD have been partly raised during the ex-post evaluation of the Directive. Therefore, the problems that the stakeholders face have been extensively discussed during the exploratory, targeted interviews and in the targeted survey. In addition, the main part relating to the incorporation, consolidation and alignment with the III-code and IMO audit was subject to discussions in the Council (Shipping working party) at the time (2013) of agreeing on a position in IMO when making the requirements mandatory at international level. It should also be recalled that all EU Member States as flag States are members of IMO and participate in the deliberations in IMO related to these issues; in fact this has been instrumental in developing the III-Code and IMO audit. They are also fully aware and discuss findings from the IMO audits performed. So there is nothing new being brought forward in these consultations other than the digitalisations aspects.

[116] VVA et al. (2023), *Impact assessment support study concerning possible revision of Directive 2009/21/EC on compliance with flag State requirements*

Respondents to the targeted survey showed to a large extent awareness of proposed measures and why they have been included as possible solutions to address the identified problems. The overall policy objectives, being the same at international, EU and national level, are also not new.

In particular, flag State Administrations were consulted in order to grasp their understanding of the problems they face by being flag State and derived accepted actions to fulfil the goals of improving maritime safety and protecting the marine environment.

Regarding the initiative's intervention areas, Figure 6 below shows that the majority of the 18 Member States who have participated to the targeted interviews and replied to this question believe that the revision of the Flag State Directive should address (to be noted that the initial list of problem drivers as reflected in Figure 6 was subsequently streamlined during the Impact Assessment process):

- the *lack of modernisation and lack digitalisation of ship registers* as the most significant amongst the problem drivers identified, followed by

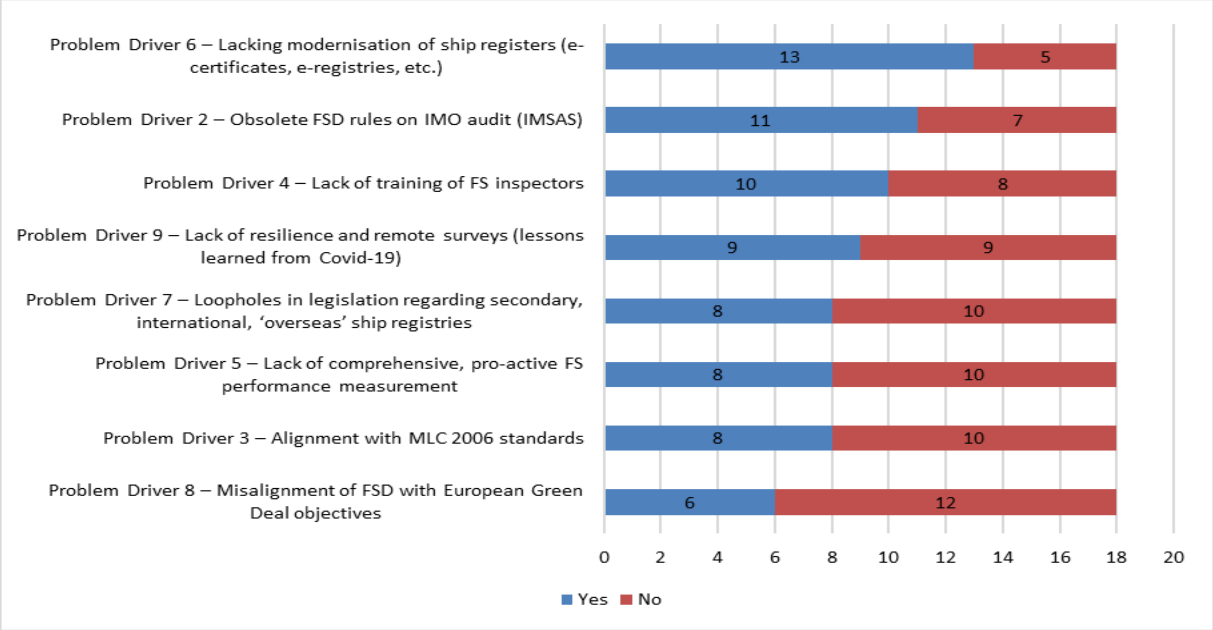
- *the obsolescence of the clause on IMSAS audit* which includes the III-code and IMO Audit;

- *lack of training of FS inspectors*, and;

- *purposeful control of flagged fleet and oversight of ROs.*

In the consultations, the representative from the IMO secretariat generally gave positive feedback, pointing out that key weaknesses among flag States as identified at the international level via the IMO-audits are the same as above. The U.S. Coast Guard generally provided positive feedback on the presented policy measures and options and highlighted the importance of alignment of EU rules at the international level.

Figure 6: Problem drivers that the revision should address (N= 18 MS)

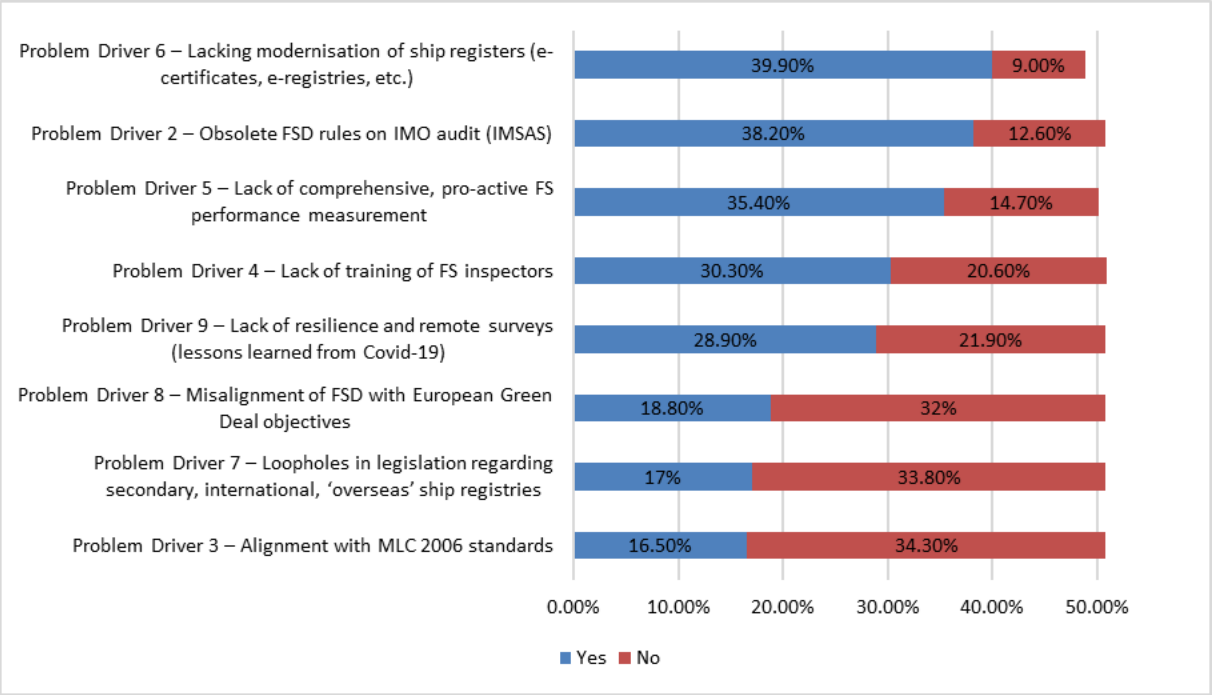


Source: Stakeholders' consultation- targeted interviews with Flag State administrations. PD 2 includes the III-code as the audit standard.

Figure 7 shows how the results change if the opinion of Member States is weighted by the size of their fleet. It is possible to notice that the ranking slightly changes regarding the most important problem drivers to be addressed by the revision of the Flag State Directive. The *lack of modernisation of ship registers*, *the*

obsolescence of the clause on IMSAS audit" and *the lack of training of FS inspectors* are still considered major points that should be addressed, but compared to Figure 6, also *the lack of comprehensive pro-active FS performance measurement* and the *lack of resilience and remote surveys* become issues where the FSD should step in. This change is due to the fact that Member States with larger fleets give more importance to these two problem drivers and would like to have an EU-level action than Member States with a smaller fleet.

Figure 7: Problem drivers that the revision should address, weighted by fleet size (N= 18 MS)



Source: Stakeholders' consultation – targeted interviews with Flag State administrations.

On the other hand, the majority of the Member States do not think that the revision of the Flag State Directive should address *the loopholes in the legislation regarding secondary, overseas registry*, *the lack of comprehensive pro-active FS performance measurement*, *the alignment with MLC 2006 standards* and *the misalignment of FSD with the objectives of the European Green Deal*. On the *lack of resilience and remote surveys* half of the Member States that replied believe that this should be addressed in the revision of the Flag State Directive, the other half has the opposite view.

In the interviews and the dedicated workshops, as well as from the analysis from the IMO audits performed by the IMO secretariat, the above main areas of concern were confirmed and supported.

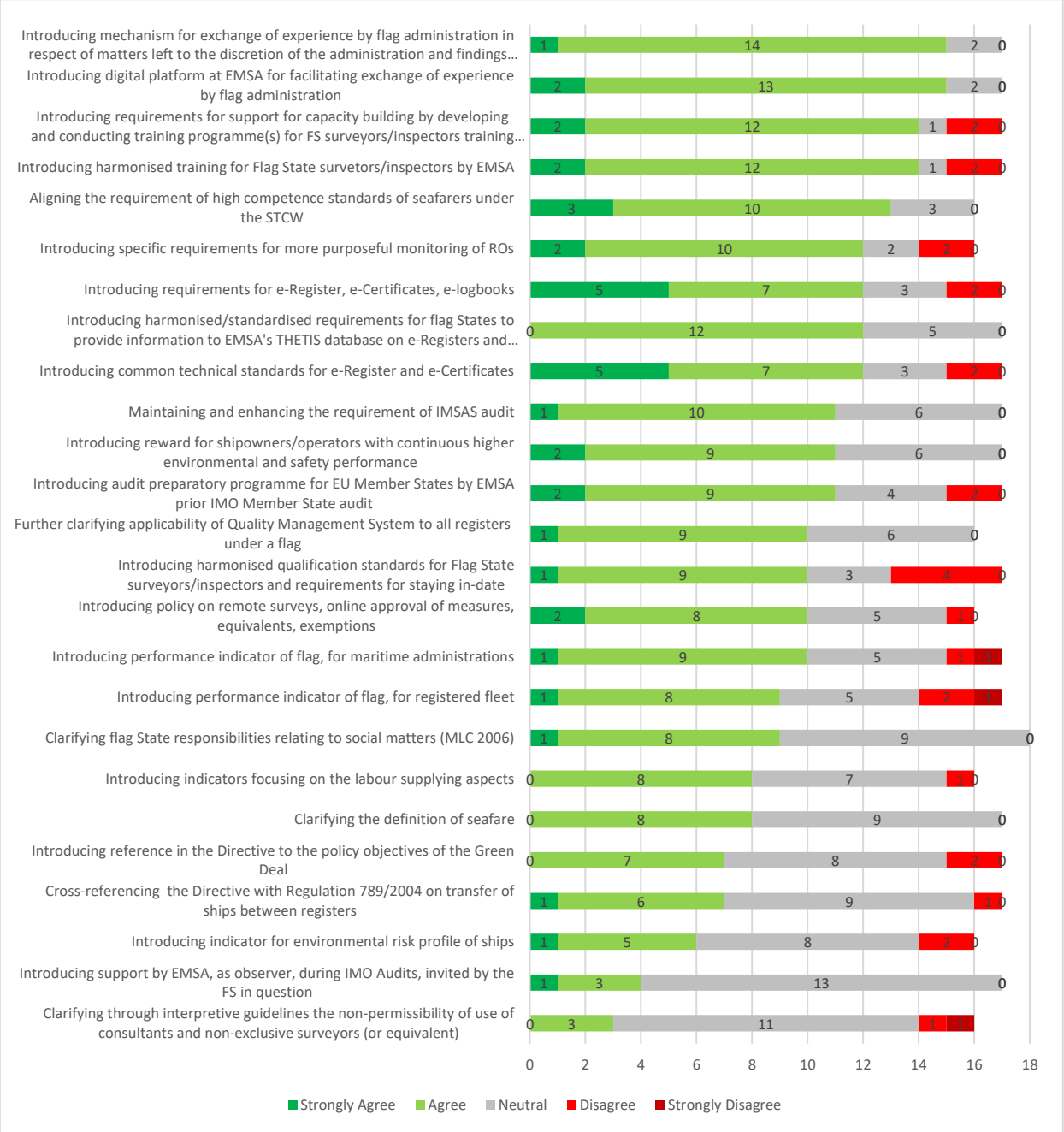
In conclusion there was agreement on the problem of legal uncertainty on the implementation of new international mandatory rules at EU level. There was also a general view that there is a lack of harmonised approach to inspections, control, monitoring and information sharing of flagged fleet. This varies a little between EU Member States depending on the size, type and trade of their flagged fleet.

3.2. Potential policy measures

The formulation of the policy measures at the time of interviews and survey was not entirely identical with the wording of this report, since fine-tuning continued all along the Impact Assessment process.

However, stakeholders were consulted on a long list of possible measures (as presented in Figure 8 below) and have been asked to share their views on further measures to address the aforementioned problems. The aim was to test their agreement with such measures, their feasibility, costs and potential benefits.

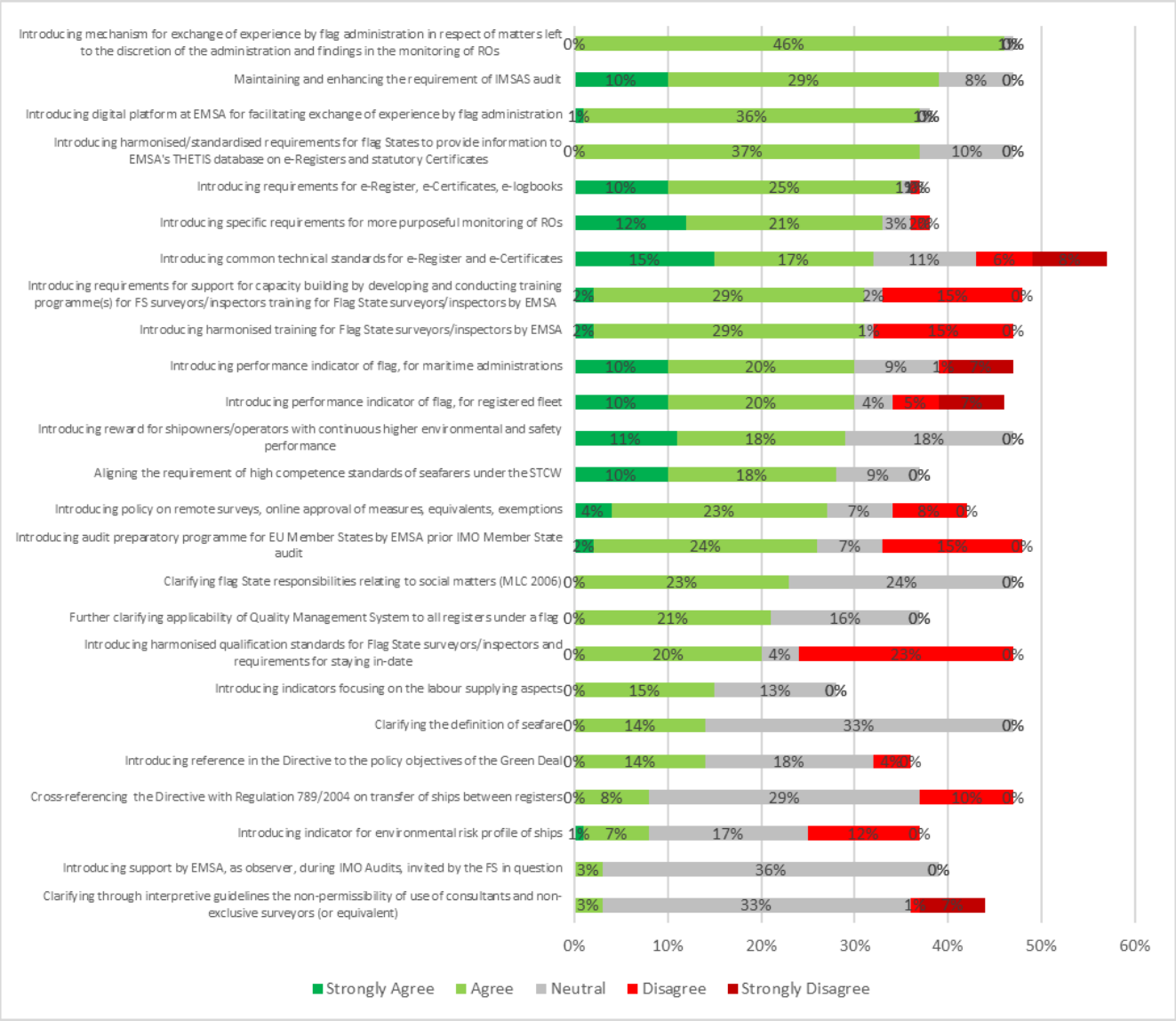
Figure 8: Member States' views on measures to improve maritime safety (N=16-18)



Source: Stakeholders' consultation - targeted interviews with Flag State administrations.

Figure 9 shows Member States' views on measures to improve maritime safety weighted by their fleet size and it is possible to notice that some results change compared to the picture depicted in the Figure 8.

Figure 9: Member States' views on measures to improve maritime safety, weighted by fleet size



Source: Stakeholders' consultation - targeted interviews with Flag State administrations

Member States, representing a large share of the EU fleet have shifted the results outweighing, in relative terms, the opinion of Member States with a smaller fleet.

In detail, it is possible to notice that the number of those who "*Disagree/Strongly Disagree*" is higher than those who "*Strongly Agree/Agree*" for the following measures:

- Introducing qualification standards for Flag State surveyors/inspectors and requirements for staying in-date;
- Cross-referencing the Directive with Regulation No 789/2004 on transfer of ships between registers;
- Introducing an indicator for the environmental risk profile of ships;

- Clarifying through interpretive guidelines the non-permissibility of use of consultants and non-exclusive surveyors (or equivalent).

Member States were asked to provide evidence substantiating these negative views:

- *Introducing qualification standards for Flag State surveyors/inspectors and requirements for staying in-date*: In some Member States (e.g. Greece and Italy), the navy is responsible for flag State duties. By being a military force, the external imposition of qualifications/requirements on curricula is not seen favourably. There is strong preference to keep national autonomy in this regard;

- *Cross-referencing the Directive with Regulation No 789/2004 on transfer of ships between registers:* no specific comment was given in this regard, but views have to be interpreted in light of the fact that the majority of Member States believe that *"the loopholes in the legislation regarding secondary, overseas registry*" should not be addressed in the context of the revision of the Flag State Directive;

- *Introducing indicator for environmental risk profile of ships:* there is a general concern among Member States that imposing higher environmental standards on ships will accelerate the negative trend of EU shipowners moving to non-EU registers. It was commented that cost-effective greener technology alternatives are not available in the market yet. Hence, any investment imposition will lead EU shipowners transferring out from EU flags. It was advocated a softer approach in this regard (e.g. "*introducing a reference to the policy objectives of the Green Deal*"). This view on a *softer approach* is also shared by the shipowner associations interviewed;

- *Clarifying through interpretive guidelines the non-permissibility of use of consultants and non-exclusive surveyors (or equivalent)*: no specific comment was given in this regard, and is interpreted in light of the fact that some Member States have fully delegated their flag State duties to ROs. This may result in that they might not have the resources to do in-house currently delegated functions and hence oppose this measure.

The policy measures have been grouped under the following headings:

Incorporation of and alignment to the international rules and procedures

No respondent has questioned the measures on alignment, since the III-Code is mandatory for EU Member States and they have to undergo the IMO-audit. There are no real impacts of this measure.

Cooperation, continuous improvement and performance

From the consultations few have questioned the need for better communication and exchange between EU Member States as flag States in a more systematic way. The idea of setting up a dedicated expert group and/or platform for such exchanges and information sharing has met with approval, in particular during the consultations with Member States in the Committee of Safe Seas and with the Maritime Directors, as such expert groups exist already for discussing and exchanging on port State control and coastal State cooperation. There is no real impact on Member States and like in the other such expert groups industry will be invited for discussing relevant issues ad hoc.

As regards flag State performance - the dedicated workshop on a modernised way to measure flag State performance allowed all concerned to better understand the suggested approach. This resulted in broader general support especially as regards a more pro-active approach and support to administrations to identify

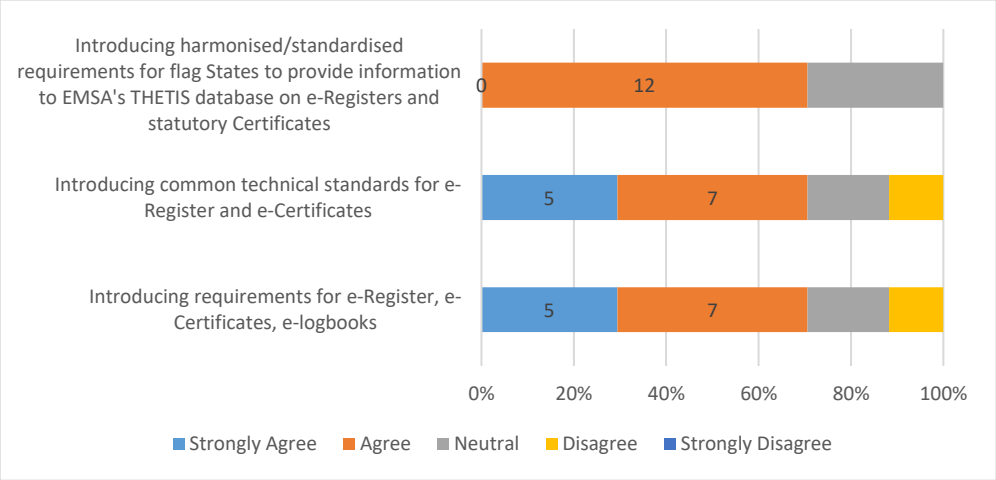
weaknesses (rather than a ranking table alone) and a wish to engage in such a performance scheme development. Several stakeholders pointed out that this is also a requirement in the III-Code and that an EU-wide such scheme, building on what is already in the Directive, would be more effective and purposeful.

Digitalisation and exchange of information

The availability of systems for electronic certification registries, e-certificates etc. is a prerequisite for moving from paper based documentation, which is still dominant in the shipping sector. So far, 6 Member States have implemented the e-certification register and reporting of e-certificates (BE, DK, DE, FI, PT and CY) and MT is in the process of implementing it.

Flag State administrations also expressed their views on the use of e-inspection reporting into THETIS, e-certificates and e-certification registers during the consultation (see Figure 10).

Figure 10: Flag State administrations' view on "e-Certificates, e-Register", (N= 18)



Source: Stakeholders' consultation

12 of the of the 18 Flag State administrations that replied to this question agree on the need for introducing a module at central level (in EMSA) for reporting e-Flag State inspection reports and e-certificates, whereas the same support was not indicated for introducing a common technical standard for e-registers, noting that the latter is not a requirement for the former.

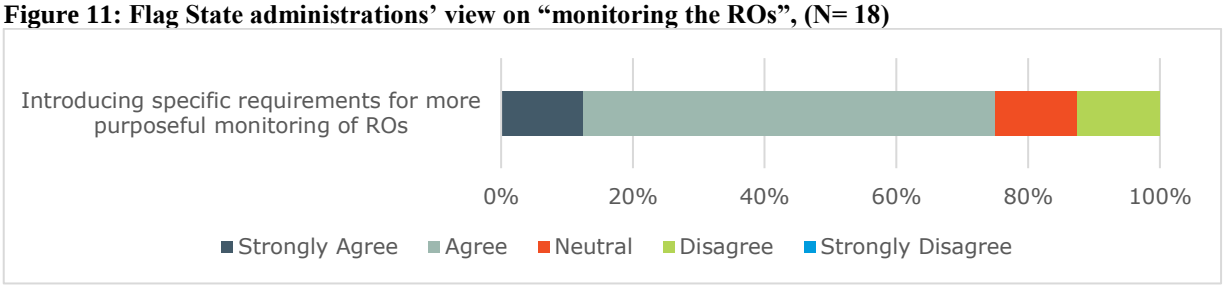
Digitalisation is also supported by Industry stakeholders; ECSA expressed the view that modern digitalised efficient flag States are attractive for shipowners. IACS expressed a certain concern as regards what standards to use or develop and that this should preferably be done at international level, while noting that all EU ROs already use the technical solution provided by EMSA for reporting e-certificates.

Capacity building, inspections and monitoring of flagged fleet

As regards monitoring of flagged fleet and oversight of ROs the majority of respondents see this as a key measure.

Out of 22 Member States with registered fleet under their flag, 18 Member State replied with 16 of them (90%) agreeing on the need to introduce specific requirements for more purposeful monitoring of recognised organisations (ROs); 1 MS was neutral and 1 disagreed on such a need.

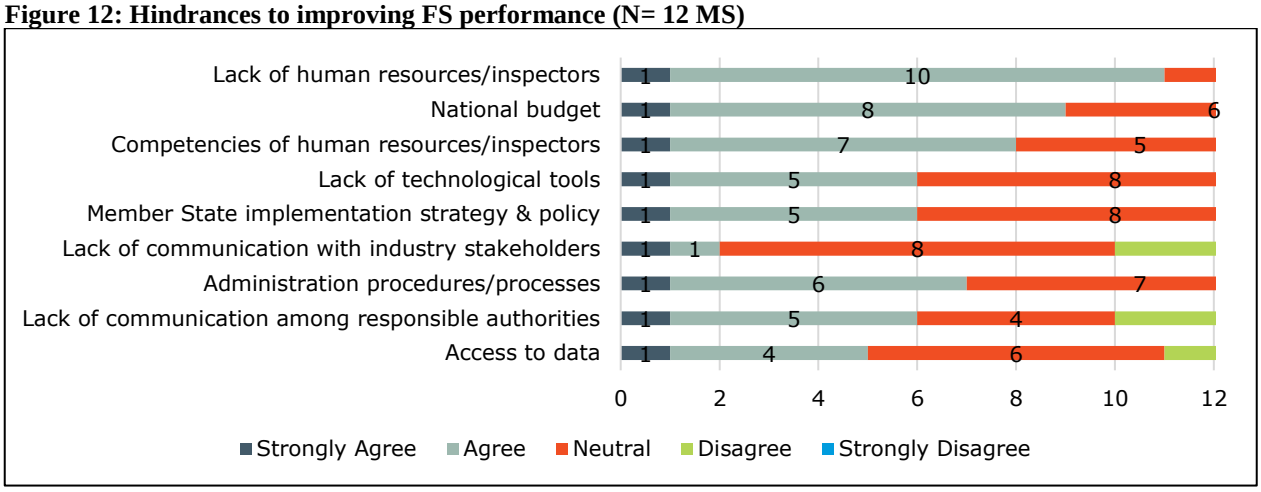
Figure 11: Flag State administrations' view on "monitoring the ROs", (N= 18)



Source: Stakeholders' consultation

However, a recurrent issue for Member States as flag States (and generally for port and coastal States), and the most relevant ones identified during the stakeholder consultation phase, concerns a lack of human resources in particular for inspections as well as competencies of the inspectors needed for RO oversight. These are the primary hindrance to improving the internal operations of a Flag State and consequently its performance, putting the achievement of a good flag performance into context. Furthermore, limited budget is a matter of equal concern for many Member States.

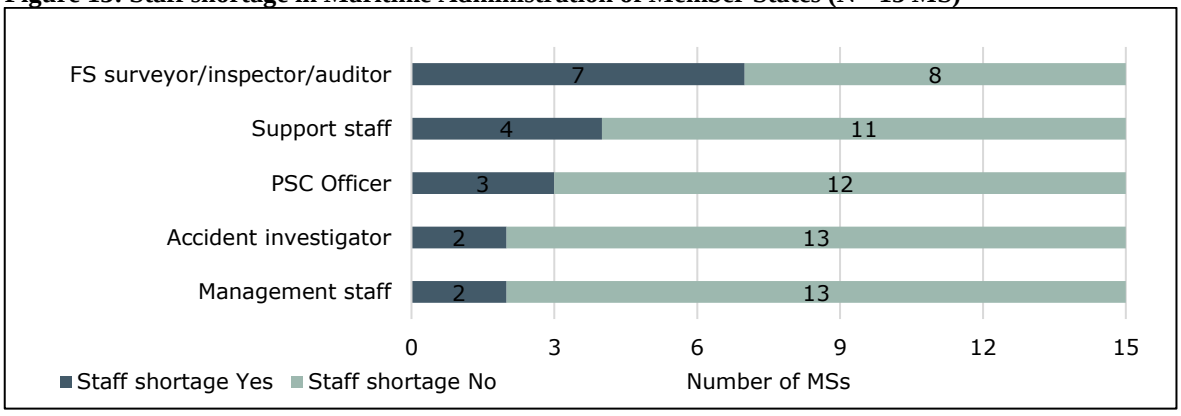
Figure 12: Hindrances to improving FS performance (N= 12 MS)



Source: Stakeholders' consultation

Regarding human resources, the issue of staff shortage is therefore a key element. The split per type of staff is presented in the figure below.

Figure 13: Staff shortage in Maritime Administration of Member States (N= 15 MS)



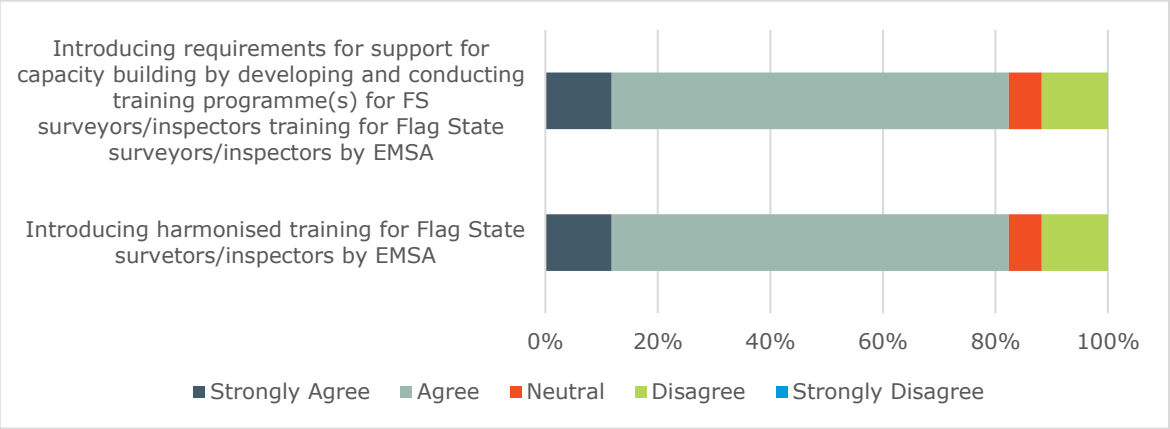
Source: Stakeholders' consultation

The number of different staff in the Flag State administration varies significantly across the different Member States. The expertise available varies greatly between the different Flag State administrations and depending on the area of competences. Some of these areas are not covered by experts in some Member States. On average, for most areas of competences, there are between 10 and 20 experts.

As regards capacity building, the large majority of Flag State administrations that replied to this question emphasized the issue of and need for the training of flag State inspectors (post-qualification) using EMSA. Member States stressed this issue both as an important factor affecting performance and as one of the barriers to sustainable safety. They also expressed a positive opinion on the necessity of standardising the training (post qualification) of FS inspectors and ensuring harmonisation. Member States emphasized that they encourage and follow up on their flag State inspectors' participation in the EMSA training.

Training, re-training and capacity building has been identified as an imperative for flag State inspectors.

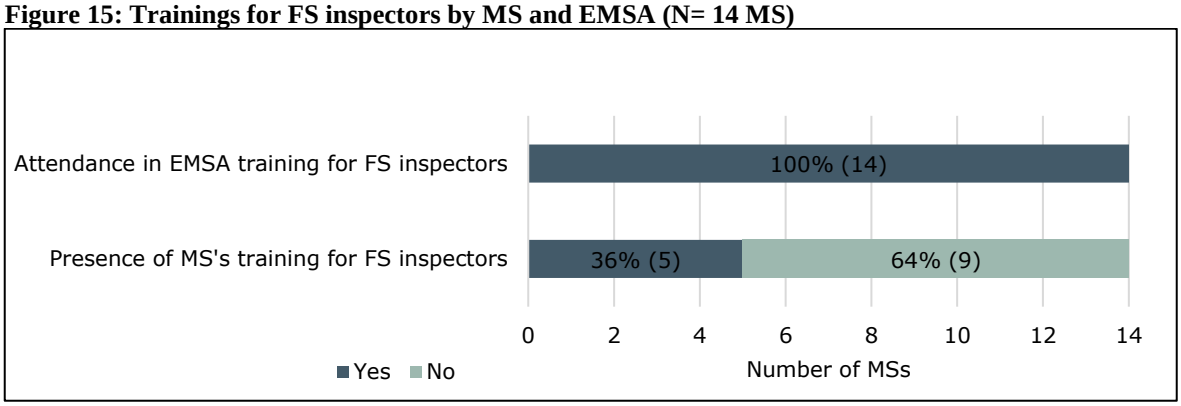
Figure 14: Flag State administrations' view on "on capacity building and training", (N= 18)



Source: Stakeholders' consultation

Only five Member States stated that they conduct an internal training program in their State (see figure below 15). Additionally, specialised training for flag State inspectors is less common at EMSA than specialised training for PSC officers. 2020 was the first year in which EMSA provided a training specifically for flag State inspectors.

Figure 15: Trainings for FS inspectors by MS and EMSA (N= 14 MS)



Source: Stakeholders' consultation

3.3. Possible impacts

The stakeholders were asked to provide input on the current administrative and inspection cost for FS compliance and the figures provided on cost /benefits estimations were duly taken into account in the calculations for the various policy measures and policy options (see Annex 4).

3.4. Differences among stakeholder groups

Virtually all consulted stakeholders supported the main problems and objectives addressed in this report. For this reason, they support the alignment of the Directive in particular to international instruments (III-Code and IMO audit), also because they are already mandatory for flag States. Industry has been involved when the Code was negotiated in IMO and see it as a way to ensure a more level playing field and equal competition internationally and therefore support the alignment. It also allows shipowners to choose quality flags and will put pressure on owners who do not, so the peer pressure internationally is a positive element. Stakeholders recognize the positive impacts that the inclusion of international instruments and the alignment would bring to flag State compliance.

Differences are all related to the resource issue. EU Member States as flag States are generally not in favour of changing the *status quo* as regards their possibilities to outsource certain work and tasks. Especially those with big fleets have a problem of finding enough expert resources and see issues in having to send them across the globe for performing survey and inspection work. They hence are not in agreement with the measure to prohibit the use of non-exclusive flag State inspectors/surveyors and are not in favor of requiring the flag State to do first statutory surveys or for ships transferring into the flag. While they see the need for control they do not want to change the practice of using ROs for most such surveys. Member States with smaller fleets see this less of a problem. Industry Stakeholders, especially ROs, also do not see any benefits. They argue that such requirements would not necessarily improve safety, as many Member States no longer have the required expertise to perform the survey and inspection work, not to train or keep such technical staff always updated with rule developments. Shipowners are less concerned as long as there is no real impact in efficiency (but see benefits in the current system). Hence, in their view such work would then either not be carried out at all or to an inferior level. They stated that additional requirements on the EU Member States would provide no substantial benefit but could incur additional costs and administrative burdens for the EU Member States, shipowners, shipbuilders and other stakeholders, which may lead to the inefficiency and lower competitiveness of EU flagged vessels.

Out of the discussed measures the one that received more support (50%) relates to requiring the EU flag State to do the first International Safety Management audit and issue corresponding certificates. This is also the survey where more Member States have not delegated such work away to ROs (four Member States still do this audit themselves and seven still issue the relevant certificates themselves).

Regarding the possibility to involve the Commission and/or EMSA as observers with the EU flag State when IMO audits are performed, one Member State raised concerns and could not see any added value rather an added burden for the flag State.

The measure on the introduction of a ratio of number of flag State inspectors in relation to flagged fleet and the revision of the Flag State performance criteria received mixed feedback from the Member States. One Member State expressed concerns for the measure on the ratio as, in their view, this would indicate how efficient the Flag is, as they see the indicator as quantitative and not qualitative.

On the issue of digitalisation and electronic certificates, while stakeholders confirm that they largely already use e-certificates, the administrations are not yet doing so. All groups of stakeholders largely welcome and support the introduction of digital tools and platforms and agree with the aim for reduced administrative burden, increased efficiency and enhanced service, such as, allowing for electronic information to be pre-loaded to THETIS and used for flag State inspection preparation purposes. Numerous stakeholders also support the setup of a framework for rewarding and incentivizing the use of electronic certificates. Technical standards for the exchange of data should preferably be defined at the global level.

While EU Member States generally were supportive, some Member States also argued against detailed technical specifications for setting up digital flag registries, mentioning that the rules should remain flexible to adapt them to the twin transition. The central point should be that all information can be shared among Member States and with the central systems hosted in EMSA. In addition, some Member States pleaded for technologically neutral solutions.

Finally some concerns were raised by Member States on the training capacity building and the role of EMSA which should not be replacing qualification requirements at national level, but could be very useful post-qualification. One Member State was not in favour of EMSA training becoming mandatory.

ANNEX 3: WHO IS AFFECTED AND HOW?

1. PRACTICAL IMPLICATIONS OF THE INITIATIVE

The revision of the flag State Directive aims at improving the level of maritime safety of vessels operating under EU Member States flags. The impacts of the preferred policy option are expected to fall on different stakeholder groups: flag State authorities, port State control authorities, EMSA, the maritime transport industry (i.e. ship owners/operators), crews of the vessels and passengers of maritime vessels.

Ensuring a high level of safety is important for the users of transport services carrying goods as well as for passengers. It is also important for vessel crews as these persons make up the largest number of persons killed and/or injured in maritime accidents. It is important for consumer protection as well as for the integrity of the internal market that a harmonised level of safety is ensured through maritime safety inspections carried out by flag States as first line of defense in a coherent and harmonised manner across the European Union. There can be no gaps in the maritime safety net.

It is also important for the environment that ships are inspected by flag States of the Union to ensure environmental standards are applied in practice on board EU Member State flagged ships.

The preferred policy option identified in the context of this impact assessment, PO2, provides for the incorporation, consolidation and alignment with the IMO International Instruments Code (III-Code) and IMO Audit to ensure that EU Member States as flag States comply with international rules (safety, security and pollution prevention). It further ensures a higher level of harmonization for ensuring control and oversight of flagged fleet and Recognized Organisations performing statutory work on their behalf on their flagged ships. It includes certain provisions for encouraging adequate and trained human resources and expertise to uphold the responsibilities incumbent on them.

Similarly, PO2 foresees the digitalisation and use of electronic certificates and electronic Flag State inspection reports via interoperable solutions into centrally held systems, hosted in EMSA. This is similar to what is proposed for PSC, by linking the use of these certificates for efficient ship inspection and control and oversight of Recognised Organisations (ROs). It is expected that by use of the certificates by flag States and the ROs to whom the flag States have delegated many tasks, this can lead to a high level of uptake allowing for better targeting of ships, better prepared and more ship focused enforcement on the flag State side and therefore a possible improvement (reduction) on the port State control side for EU member State flagged ships.

Moreover, PO2 envisages improved capacity building and training for flag State inspectors (post-qualification) drawing and building from the experience in doing the same for PSC Inspectors. The aim is to create a common understanding in how to perform and report flag State inspections and in how to enhance the monitoring of ROs. This is supported by the digitalization explained above and through the sharing of all information, both from flag and port State inspections, between all Member States (via the centrally held systems hosted in EMSA).

The preferred policy option also provides for improvements in collecting some key data and information regarding inspections and inspectors as well as modernizing the way performance of flag States are measured aiming at a more pro-active method enabling continuous improvement of both flagged fleet and the work of the flag administration. This is to be done via a delegated act.

Implications for consumers, public authorities and other market actors

The following key target groups of this initiative have been identified:

- Flag State authorities in EU Member States
- Recognised Organisations acting on behalf of EU Member States as flag States
- Port State control authorities in EU Member States
- European Maritime Safety Agency (EMSA)
- Owners/operators of maritime transport vessels.

Even if the safety record of EU flags is showing a stable high level, there is no place for complacency and the mandatory new rules at international level have been agreed indeed for that very purpose. Ultimately there can only be fair competition and low risk if all implement and enforce the rules in practice. This is the same at EU as well as international level.

EU flag State authorities will be affected in the following ways: Member States have reduced resources over the past 15-20 years to a situation where there is now a risk of not being able to meet their obligations as flag States. At the same time fleets have overall remained the same in terms of number of ships and percentage of world fleet. This is the first line of defence and enforcement will be more harmonised and strengthened, that inevitably carries a cost.

Firstly, Member States flags will apply in a consolidated and therefore harmonised way the III-Code, using resources to carry out inspections of flagged vessels and at the same time monitor ROs. Flag States will benefit from the operational support that they will receive from EMSA which should allow them to better discharge their obligations in an efficient and timely manner particularly when using the digitalisation and sharing of information. All this with the aim to improve efficiency by working together (in the same way as PSC) at the EU level. It is coupled with more harmonised capacity building, enhancing technical knowledge and a more common understanding, using EMSA as the competence centre, and by using a common core capacity building (post qualification).

Secondly, the requirement of going digital and the use of electronic certificates should have a positive impact on flag State administrations by allowing for more focussed, better prepared and ship focused inspections.

A quality EU Member States flagged fleet is less likely to be detained in PSC. This is where it is attractive for quality shipowners, with the EU showing the way internationally and maintaining its reputable quality shipping.

A third aspect is that flag State administrations will carry out inspections in a more harmonised way and will take account of changes and requirements now mandatory at the international level as well as a number of policy measures proposed by the amendment to take account of lessons learned in implementation of the Directive.

Classification Societies/Recognised Organsiations will be affected by increased monitoring but at the same time more efficient and EU wide monitoring that may actually lead to less audits at their offices. Alignment with international rules means a more harmonised approach also for ROs in performing the technical work on behalf of the EU Member States as flag States. The impact of requiring Member States to have the adequate resources but not to retain doing statutory surveys, unless the flag State wants to (in their full right to do any statutory surveys), will work to the advantage of ROs in their communication with the flag State regarding vessels under their flag. There is no direct impact of flag State inspections as they are not leading to statutory

certification, but a means to control that such surveys are performed to the satisfaction and in accordance with applicable international (and, as the case may be, nations) rules. ROs have the same interest in compliance as any flag State.

EMSA will have to work with flag States, Recognised Organisations (which act on behalf of flag states), the Paris MoU and other interested bodies to develop a common data protocol, a validation tool and a repository to allow for the use and exchange of electronic certificates.

The Agency will be impacted as regards FSD as it is will provide and ensure interoperability with national systems and set up a dedicated module for flag State inspection reports and e-certificates, at central level (in THETIS), supporting efficient reporting of inspections and recording and sharing the results with both flag States and port States. This will build on the already required flag State inspection reporting (into a module in THETIS) for roll-on roll-off passenger ships.

EMSA will also provide different forms of technical support and training to national flag State bodies.

Maritime transport operators will be impacted in that the changes to the Directive brought about by alignment will lead to a limited number of additional flag State inspections. The additional costs for the sector of these inspections are however expected to be limited.

On the other hand, costs savings are expected due to the implementation of digital solutions and other benefits in terms of improved safety, espacially as regads monitoring and oversight of ROs action on behlaf of flag States. These benefits overcompensate the costs for the industry (i.e. shipowners/operators). The flag State compliance and control should result in fewer PSC detentions and with time PSC inspections for shipowners under EU member State flags.

Given that **crews** are systematically the most impacted category of people as regards injuries and death in maritime transport any improvement to safety will impact on them positively. Positive impacts in terms of safety improvements are also expected for the environment and as regards pollution prevention as higher safety should lead to fewer accident and therefore less pollution (in water) due to accidents.

2. SUMMARY OF COSTS AND BENEFITS

I. Overview of Benefits (total for all provisions) – Preferred Option *(Policy Option 2)*		
Description	***Amount***	***Comments***
Direct benefits		
Improvement in the functioning of the internal market		Positive impact on the functioning of the internal market, both by improving overall maritime safety for the benefit of freight customers and passengers throughout the Union as well as by ensuring that the same safety level applies throughout the Union. The path towards digitalisation results in a high degree of harmonisation between Member States.
Enforcement costs savings for flag State authorities relative to the baseline (i.e. present value over 2025-2050)	EUR 48.8 to 52.9 million	Enforcement costs savings for flag State authorities are driven by measures related to the uptake of digital solutions. In terms of present value over 2025-2050, the enforcement costs savings are estimated at EUR 48.8 to 52.9 million.

I. Overview of Benefits (total for all provisions) – Preferred Option *(Policy Option 2)*		
Description	***Amount***	***Comments***
Direct benefits		
Adjustment costs savings for ship operators relative to the baseline (i.e. present value over 2025-2050)	EUR 0.6 to 1.2 million	Adjustment costs savings for ship operators are driven by measures related to the uptake of digital solutions. In terms of present value over 2025-2050, the adjustment costs savings are estimated at EUR 0.6 to 1.2 million.
Indirect benefits		
Reduction of external costs related to accidents relative to the baseline (i.e. present value over 2025-2050)	EUR 2,397.3 million	Indirect benefit to ships' crews, and to society at large, due to the lives saved and injuries avoided. As deficiencies identified during flag State inspections typically have to be rectified for the ships to maintain their certificates, flag State inspections are expected to lead to a reduction in the number of ship deficiencies over time and thereby to improve safety. The impacts are estimated at 69 lives saved and 810 injuries avoided relative to the baseline over 2025-2050 relative to the baseline. The reduction of the external costs related to accidents relative to the baseline (i.e. present value over 2025-2050) is estimated at EUR 2,397.3 million.
Reduction in the bunker fuel lost at sea, relative to the baseline over 2025-2050 (in tonnes)	1,418 tonnes of bunker fuel lost avoided	Indirect benefit to society at large. Preventing accidents from occurring in the future is projected to avoid 1,418 tonnes of bunker fuel lost at sea relative to the baseline. This is expected to have a positive impact on the quality of marine water and biodiversity.
Administrative cost savings related to the 'one in, one out' approach*		
-	-	Not relevant.

II. Overview of costs – Preferred option *(Policy Option 2)*						
	Citizens/Consumers		**Businesses**		**Administrations**	
	One-off	**Recurrent**	**One-off**	**Recurrent**	**One-off**	**Recurrent**
Direct adjustment costs relative to the baseline (i.e. present value over 2025-2050)	-	-	-	For ship operators: 3.2 million	For flag State authorities: EUR 3.3 million For EMSA: EUR 0.5 million	For flag State authorities: EUR 45.6 million For EMSA: EUR 5.9 to 6.5 million For the European Commission:

II. Overview of costs – Preferred option *(Policy Option 2)*							
		Citizens/Consumers		**Businesses**		**Administrations**	
		One-off	**Recurrent**	**One-off**	**Recurrent**	**One-off**	**Recurrent**
							EUR 0.6 to 1.1 million
Direct administrative costs		-	-	-	-	-	-
Direct enforcement costs relative to the baseline (i.e. present value over 2025-2050)		-	-	-	-	-	For flag State authorities: EUR 0.1 to 0.3 million
Costs related to the 'one in, one out' approach							
Total	Direct adjustment costs	-	-	-	Direct adjustment costs for ship operators are estimated at EUR 3.2 million. They are expected to be compensated by the adjustment costs savings due to the digital solutions (EUR 0.6 to 1.2 million) and the safety benefits.		
	Indirect adjustment costs	-	-	-	-		
	Administrative costs (for offsetting)	-	-	-	-		

3. RELEVANT SUSTAINABLE DEVELOPMENT GOALS

III. Overview of relevant Sustainable Development Goals – Preferred Option *(Policy Option 2)*		
Relevant SDG	**Expected progress towards the Goal**	**Comments**
SDG 3 "Ensure healthy lives and promote well-being for all at all ages"	Changes to the Directive are expected to contribute to health and well-being. As deficiencies identified during FS inspections typically have to be rectified, better prepared, better carried out and more targeted FS inspections are expected to lead to a reduction in the number of ship deficiencies over time and	The preferred policy option is projected to result in 69 lives saved and 810 injuries avoided relative to the baseline over 2025-2050 relative to the baseline.

	thereby may prevent future injuries or fatalities.	
SDG 14 “Conserve and sustainably use the oceans, seas and marine resources for sustainable development”	Changes to the Directive are expected to contribute to preventing future damage to the marine environment through accidents.	Preventing accidents from occurring in the future is projected to avoid 1,418 tonnes of bunker fuel lost at sea relative to the baseline over 2025-2050. This is expected to have a positive impact on the quality of marine water and biodiversity.

ANNEX 4: ANALYTICAL METHODS

4. Description of the analytical methods used

The main model used for developing the baseline scenario for this initiative is the PRIMES-Maritime transport model by E3Modelling, a specific sub-module of the PRIMES and PRIMES-TREMOVE models. The model has a successful record of use in the Commission's energy, transport and climate policy assessments. In particular, it has been used for the impact assessments underpinning the "Fit for 55" package[117], the impact assessments accompanying the 2030 Climate Target Plan[118] and the Staff Working Document accompanying the Sustainable and Smart Mobility Strategy[119], the Commission's proposal for a Long Term Strategy[120] as well as for the 2020 and 2030 EU's climate and energy policy framework.

For the assessment of the impacts of the policy options an Excel-based tool has been developed by VVA, WMU and admaris in the context of the impact assessment support study[121]. The tool draws on the Standard Cost Model for the assessment of the administrative costs. The Excel-based tool builds extensively on data provided by EMSA, including data from EMCIP, and the analysis of stakeholders' feedback. The proposed measures which involve the amendment of the Directive are assumed to be implemented from 2025 onwards, so that the assessment has been undertaken for the 2025-2050 period and refers to EU27. Costs and benefits are expressed as present value over the 2022-2050 period, using a 3% discount rate.

PRIMES-Maritime model

The PRIMES-Maritime transport model is a specific sub-module of the PRIMES and PRIMES-TREMOVE models and aims to enhance the representation of the maritime sector within the energy-economy-environment modelling nexus. The model, which can run in stand-alone and/ or linked mode with PRIMES and PRIMES-TREMOVE, produces long-term transport activity, energy and emission projections, until 2070, separately for each EU Member State. The coverage of the model includes the European intra-EU maritime sector as well as the extra-EU maritime shipping. The model covers both freight and passenger international maritime. PRIMES-Maritime focuses only on the EU Member States, therefore trade activity between non-EU countries is outside the scope of the model. The model considers the transactions (bilateral trade by product type) of the EU-Member States with non-EU countries and aggregates these countries in regions. Several types and sizes of vessels are considered.

PRIMES-Maritime features a modular approach based on the demand and the supply modules. The demand module projects maritime activity for each EU Member State by type of cargo and by corresponding partner. Econometric functions correlate demand for maritime transport services with economic indicators considered as demand drivers, including GDP, trade of energy commodities (oil, coal, LNG), trade of non-energy commodities, international fuel prices, etc. The supply module simulates a representative operator controlling the EU fleet, who offers the requested maritime transport services. The operator of the fleet decides the allocation of the vessels activity to the various markets (representing the different EU MS) where different regulatory regimes may apply (e.g. environmental zones). The fleet of vessels is disaggregated into several

[117] Delivering the European Green Deal | European Commission (europa.eu)
[118] SWD(2020)176 final.
[119] EUR-Lex - 52020SC0331 - EN - EUR-Lex (europa.eu)
[120] Source: 2050 long-term strategy (europa.eu)
[121] VVA et al. (2023), Impact assessment support study concerning possible revision of Directive 2009/21/EC on Flag State Requirements.

categories. PRIMES-Maritime utilises a stock-flow relationship to simulate the evolution of the fleet of vessels throughout the projection period and the purchasing of new vessels.

PRIMES-Maritime solves a virtual market equilibrium problem, where demand and supply interact dynamically in each consecutive time period, influenced by a variety of exogenous policy variables, notably fuel standards, pricing signals (e.g. Emission Trading Scheme), environmental and efficiency/operational regulations and others. The PRIMES-Maritime model projects energy consumption by fuel type and purpose as well as CO_2, methane and N_2O and other pollutant emissions. The model includes projections of costs, such as capital, fuel, operation costs, projections of investment expenditures in new vessels and negative externalities from air pollution.

The model serves to quantify policy scenarios supporting the transition towards carbon neutrality. It considers the handling of a variety of fuels such as fossil fuels, biofuels (bioheavy[122], biodiesel, bio-LNG), synthetic fuels (synthetic diesel, fuel oil and gas, e-ammonia and e-methanol) produced from renewable electricity, hydrogen produced from renewable electricity (for direct use and for use in fuel cell vessels) and electricity for electric vessels. Well-To-Wake emissions are calculated thanks to the linkage with the PRIMES energy systems model which derives ways of producing such fuels. The model also allows to explore synergies with Onshore Power Supply systems. Environmental regulation, fuel blending mandates, greenhouse gas emissions reduction targets, pricing signals and policies increasing the availability of fuel supply and supporting the alternative fuel infrastructure are identified as drivers, along fuel costs, for the penetration of new fuels. As the model is dynamic and handles vessel vintages, capital turnover is explicit in the model, influencing the pace of fuel and vessel substitution.

Data inputs

The main data sources for inputs to the PRIMES-Maritime model, such as for activity and energy consumption, comes from EUROSTAT database and from the Statistical Pocketbook "EU transport in figures"[123]. Other data comes from different sources such as research projects (e.g. TRACCS project) and reports. PRIMES-Maritime being part of the overall PRIMES and PRIMES-TREMOVE transport model is calibrated to the EUROSTAT energy balances and transport activity; hence the associated CO_2 emissions are assumed to derive from the combustion of these fuel quantities. The model has been adapted to reflect allocation of CO_2 emissions into intra-EU, extra-EU and berth, in line with data from the MRV database[124]. For air pollutants, the model draws on the EEA database. In the context of this exercise, the PRIMES-Maritime model is calibrated to 2005, 2010 and 2015 historical data.

5. Baseline scenario

In order to reflect the fundamental socio-economic, technological and policy developments, the Commission prepares periodically an EU Reference Scenario on energy, transport and GHG emissions. The socio-economic and technological developments used for developing the baseline scenario for this impact assessment build on the latest "EU Reference 2020 scenario" (REF2020)[125]. The same assumptions have been used in the policy scenarios underpinning the impact assessments accompanying the "Fit for 55" package[126].

[122] Bioheavy refers to bio heavy fuel oil.
[123] Publications (europa.eu)
[124] THETIS-MRV (europa.eu)
[125] EU Reference Scenario 2020 (europa.eu)
[126] Policy scenarios for delivering the European Green Deal (europa.eu)

Main assumptions of the Baseline scenario

The main assumptions related to economic development, international energy prices and technologies are described below.

Economic assumptions

The modelling work is based on socio-economic assumptions describing the expected evolution of the European society. Long-term projections on population dynamics and economic activity form part of the input to the model and are used to estimate transport activity, particularly relevant for this impact assessment.

Population projections from Eurostat[127] are used to estimate the evolution of the European population, which is expected to change little in total number in the coming decades. The GDP growth projections are from the Ageing Report 2021[128] by the Directorate General for Economic and Financial Affairs, which are based on the same population growth assumptions.

Table 11: Projected population and GDP growth per Member State

	Population			GDP growth	
	2020	2025	2030	2020-'25	2026-'30
EU27	447.7	449.3	449.1	0.9%	1.1%
Austria	8.90	9.03	9.15	0.9%	1.2%
Belgium	11.51	11.66	11.76	0.8%	0.8%
Bulgaria	6.95	6.69	6.45	0.7%	1.3%
Croatia	4.06	3.94	3.83	0.2%	0.6%
Cyprus	0.89	0.93	0.96	0.7%	1.7%
Czechia	10.69	10.79	10.76	1.6%	2.0%
Denmark	5.81	5.88	5.96	2.0%	1.7%
Estonia	1.33	1.32	1.31	2.2%	2.6%
Finland	5.53	5.54	5.52	0.6%	1.2%
France	67.20	68.04	68.75	0.7%	1.0%
Germany	83.14	83.48	83.45	0.8%	0.7%
Greece	10.70	10.51	10.30	0.7%	0.6%
Hungary	9.77	9.70	9.62	1.8%	2.6%
Ireland	4.97	5.27	5.50	2.0%	1.7%
Italy	60.29	60.09	59.94	0.3%	0.3%
Latvia	1.91	1.82	1.71	1.4%	1.9%
Lithuania	2.79	2.71	2.58	1.7%	1.5%
Luxembourg	0.63	0.66	0.69	1.7%	2.0%
Malta	0.51	0.56	0.59	2.7%	4.1%
Netherlands	17.40	17.75	17.97	0.7%	0.7%
Poland	37.94	37.57	37.02	2.1%	2.4%
Portugal	10.29	10.22	10.09	0.8%	0.8%
Romania	19.28	18.51	17.81	2.7%	3.0%

[127] EUROPOP2019 population projections: Eurostat - Data Explorer (europa.eu)
[128] The 2021 Ageing Report : Underlying assumptions and projection methodologies The 2021 Ageing Report: Underlying Assumptions and Projection Methodologies | European Commission (europa.eu)

	Population			GDP growth	
	2020	2025	2030	2020-'25	2026-'30
Slovakia	5.46	5.47	5.44	1.1%	1.7%
Slovenia	2.10	2.11	2.11	2.1%	2.4%
Spain	47.32	48.31	48.75	0.9%	1.6%
Sweden	10.32	10.75	11.10	1.4%	2.2%

Beyond the update of the population and growth assumptions, an update of the projections on the sectoral composition of GDP was also carried out using the GEM-E3 computable general equilibrium model. These projections take into account the potential medium- to long-term impacts of the COVID-19 crisis on the structure of the economy, even though there are inherent uncertainties related to its eventual impacts. Overall, conservative assumptions were made regarding the medium-term impacts of the pandemic on the re-localisation of global value chains, teleworking and teleconferencing and global tourism.

International energy prices assumptions

Alongside socio-economic projections, transport modelling requires projections of international fuel prices. The projections of the POLES-JRC model – elaborated by the Joint Research Centre and derived from the Global Energy and Climate Outlook (GECO[129]) – are used to obtain long-term estimates of the international fuel prices. The table below shows the oil prices assumptions of the baseline and policy options of this impact assessment.

Table 12: Oil prices assumptions

in $'15 per boe	2015	2020	2030	2040	2050
Oil	52.3	39.8	80.1	97.4	117.9
in €'15 per boe	2015	2020	2030	2040	2050
Oil	47.2	35.8	72.2	87.8	106.3

Source: Derived from JRC, POLES-JRC model, Global Energy and Climate Outlook (GECO)

Technology assumptions

Modelling scenarios is highly dependent on the assumptions on the development of technologies - both in terms of performance and costs. For the purpose of the impact assessments related to the "Climate Target Plan" and the "Fit for 55" policy package, these assumptions have been updated based on a rigorous literature review carried out by external consultants in collaboration with the JRC. Continuing the approach adopted in the long-term strategy in 2018, the Commission consulted on the technology assumption with stakeholders in 2019. In particular, the technology database of the PRIMES and PRIMES-TREMOVE models (together with GAINS, GLOBIOM, and CAPRI) benefited from a dedicated consultation workshop held on 11th November 2019. EU Member States representatives also had the opportunity to comment on the costs elements during a workshop held on 25th November 2019. The updated technology assumptions are published together with the EU Reference Scenario 2020[130]. The same assumptions have been used in the context of this impact assessment.

[129] https://ec.europa.eu/jrc/en/geco
[130] EU Reference Scenario 2020 (europa.eu)

Policies in the Baseline scenario

Building on the EU Reference scenario 2020, the baseline scenario for this impact assessment has been designed to include the initiatives of the 'Fit for 55' package[131].

The Baseline scenario assumes no further EU level intervention beyond the current FS Directive. The IMO III-Code became mandatory on 1 January 2016. Parts 1 and 2 of the III-Code are particularly relevant for the flag States. Some sections of part 1 and 2 are already covered in full (i.e. records, improvement, delegation of authority, flag State investigations) or in part by EU legislation (e.g. objectives, improvement, implementation) and others need to be introduced (i.e. enforcement, flag State surveyors). Parts 3 and 4 of the III-Code are covered in EU legislation via the VTMIS Directive[132] and the port State control Directive[133]. The Baseline scenario assumes that the EU legislation will continue to reflect the new international mandatory rules in a fragmented manner.

The IMO Audit has also become mandatory since the adoption of the FSD under the III-Code, while the current corresponding provision in the FSD (article 7) requiring Member States to undergo the then voluntary IMO audit, ceased to be applicable. All Member States have undergone the IMO Audit and are expected to continue to do so, as flag States agreed to be bound by the mandatory rules following the Council Decision 2013/268/EU.

Six Member States have implemented the e-certification register and reporting of e-certificates (Belgium, Denmark, Germany, Finland, Portugal and Cyprus) and Malta is in the process of implementing it. Few Member States such as Austria, Czech Republic, Hungary, Slovakia and Slovenia[134] do not have an active register or convention ships flying their flag any longer, and do not have to put in place an e-certification registry. In the Baseline scenario, the Member States that have implemented the e-certification register and reporting of e-certificates are expected to continue to do so.

The role of EMSA in the implementation of the Directive is central. EMSA provides training on flag State issues on a voluntary basis, operates the THETIS and SafeSeaNet systems and have worked out technical solution for the reporting and sharing of e-certificates as well as e-flag State inspection reports (RO-PAX) that can be built upon. It has also started a project (DONA) for flag States administrations to report statistics and data, on a voluntary basis, enabling the creation of MS profiles including core information.

Baseline scenario results

The COVID-19 pandemic had a major impact on global shipping, affecting all its segments from passenger ships to container ships and oil tankers. In the baseline scenario, international maritime freight transport activity (intra and extra-EU) is projected to be 21% lower in 2020 relative to 2015. From 2021 onwards however it is projected to start recovering and grow strongly by 2025 and beyond (i.e. 19% growth for 2015-2030 and 48% for 2015-2050), due to the rising demand for primary resources and container shipping. Relative to 2019, this is equivalent to 8% increase in transport activity by 2030 and 33% growth by 2050.

[131] Delivering the European Green Deal | European Commission (europa.eu)
[132] Directive 2002/59/EC
[133] Directive 2009/16/EC
[134] Slovenia as a coastal and port State has an administration dealing with coastal and port State issues and has a limited number of ships operating locally.

The number of port calls for 2025-2050 is projected to grow at a lower rate than transport activity, following similar evolution over the historical period[135]. This reflects the fact that transport activity is also driven by other factors such as the increase in the size of vessels over time, and of the distance travelled. In the baseline scenario the number of port calls is projected to go up by 14% by 2030 relative to 2015 and by 36% by 2050 (equivalent to 6% growth by 2030 relative to 2019 and 26% increase by 2050), following the recovery from the COVID-19 pandemic. The number of port calls reported by EU flagged and non-EU flagged vessels is assumed to grow at similar rates by 2050 relative to 2019, meaning that the share of the number of port calls reported by the EU flagged vessels would remain stable over time, at around 73% of the total number of port calls.

Driven by the increase in the transport activity and the number of vessels, the number of marine casualties in which EU flagged and non-EU flagged vessels are involved is projected to increase over time in the baseline scenario. The number of casualties is projected to increase by 16% by 2030 relative to 2019 and by 53% by 2050 without further EU level action[136]. At the same time, the degree of severity of marine casualties is projected to decrease, leading to a 10% decrease in the number of fatalities in which EU flagged and non-EU flagged vessels are involved by 2030. However, post-2030 the increase in the transport activity and the number of vessels outweighs the reduction in the degree of severity of marine casualties and the number of fatalities increase by 12% by 2050 relative to 2019.

Table 13: Projected number of marine casualties, vessels lost, fatalities and injuries in which EU and non-EU flagged vessels are involved in the baseline scenario, in EU27

	2019 (levels)	Cumulative growth rates		
		'19-'30	'19-'40	'19-'50
Marine casualties	2,121	16%	29%	53%
Vessels lost	7	0%	0%	29%
Fatalities	50	-10%	-2%	12%
Injuries	427	15%	27%	50%

Source: VVA et al. (2023), Impact assessment support study

The projected numbers of marine casualties, vessels lost, fatalities and injuries in which EU flagged and non-EU flagged vessels are involved in the baseline scenario, by vessel type, are provided in Table 14. They are derived based on the projected growth in the number of vessels and the occurrence ratios. For all vessels types, the occurrence ratios[137] are assumed to remain constant over time at their 2019 levels, drawing on information for the historical period from EMCIP. This is also the case for the ratios between vessels lost, fatalities, injuries and the vessel fleet. As already explained, the baseline scenario is common to that of the impact assessment accompanying the revision of the Accident Investigation Directive and of the Port State Directive.

Table 14: Projected numbers of marine casualties, vessels lost, fatalities and injuries in which EU and non-EU flagged vessels are involved in the baseline scenario, by vessel type (EU27)

	Levels			
	2019	2030	2040	2050
Cargo vessels				
Marine casualties	1,233	1,452	1,623	1,969
Vessels lost	1	1	1	2
Fatalities	24	28	32	38

[135] The same ratio between the growth in the number of port calls and the transport activity as for the historical period (2014-2019) has been assumed for the projection period.
[136] Excluding fishing vessels.
[137] Ratio between the number of marine casualties and the number of vessels.

	Levels			
	2019	2030	2040	2050
Injuries	204	240	268	326
Passenger vessels				
Marine casualties	616	733	821	994
Vessels lost	1	1	1	2
Fatalities	3	4	4	5
Injuries	145	173	193	234
Service vessels				
Marine casualties	193	201	204	206
Vessels lost	2	2	2	2
Fatalities	16	6	6	6
Injuries	39	41	41	42
Other vessels				
Marine casualties	79	79	79	79
Vessels lost	3	3	3	3
Fatalities	7	7	7	7
Injuries	39	39	39	39

Source: VVA et al. (2023), Impact assessment support study

The number of marine casualties in which EU flagged vessels are involved is projected to increase by 7% by 2030 relative to 2019 and by 45% by 2050 without further EU level action (Table 15). At the same time, the degree of severity of marine casualties is projected to decrease, leading to a 17% decrease in the number of fatalities in which EU flagged vessels are involved by 2030. However, post-2030 the increase in the transport activity and the number of EU flagged vessels outweighs the reduction in the degree of severity of marine casualties and the number of fatalities increases by 14% by 2050 relative to 2019.

Table 15: Projected number of marine casualties, vessels lost, fatalities and injuries in which EU and non-EU flagged vessels are involved in the baseline scenario, in EU27

	2019 (levels)	Cumulative growth rates		
		'19-'30	'19-'40	'19-'50
Commercial vessels				
Marine casualties	1,465	7%	19%	45%
Vessels lost	1	0%	0%	100%
Fatalities	29	-17%	-7%	14%
Injuries	302	-2%	9%	32%

Source: VVA et al. (2023), Impact assessment support study

The projected developments in the number of fatalities in the baseline, presented above, are still far from the goal of the Sustainable and Smart Mobility Strategy of close to zero death toll for all modes of transport in the EU.

The tonnes of bunker fuel lost at sea due to very serious marine casualties involving EU flagged ships is estimated to go up from around 390 tonnes in 2019 to 510 tonnes in 2030 and 690 tonnes in 2050[138].

The projected evolution of the number of flag State inspections in the baseline draws on data on inspections provided by the flag State administrations for 2021, on the projected evolution of the EU flagged fleet in the baseline and the share of vessels that undergo an inspection in 2021. In the baseline, the share of vessels that undergo an inspection is assumed to remain constant over time. Table 16 provides the projected number of

[138] Excluding fishing vessels. An average level of 30 tonnes of bunker fuels lost per vessel has been used for the estimations in the context of the impact assessment support study.

flag State inspections in the baseline scenario. Few Member States such as Austria, Czech Republic, Hungary, Slovakia and Slovenia[139] (highlighted in grey in Table 16) do not have an active register or convention ships flying their flag any longer and do not need to undertake inspections. At EU level, the number of flag State inspections is projected to increase by 14% by 2030 and 55% by 2050 relative to 2021.

Table 16: Projected number of flag State inspections in the baseline scenario

	2021	2030	2040	2050
AT	0	0	0	0
BE	22	25	27	33
BG	9	9	9	9
CZ	0	0	0	0
DK	127	146	162	197
DE	2	2	3	3
EE	0	0	0	0
IE	36	41	47	55
EL	162	185	207	252
ES	88	102	114	138
FR	47	54	60	73
HR	16	18	21	25
IT	37	42	47	58
CY	214	245	273	332
LV	14	15	17	20
LT	48	54	54	68
LU	50	60	71	88
HU	0	0	0	0
MT	896	1,026	1,148	1,392
NL	90	103	115	140
PL	39	43	43	54
PT	1	1	1	2
RO	0	0	0	0
SI	0	0	0	0
SK	0	0	0	0
FI	8	9	10	12
SE	50	58	65	79
Total	**1,956**	**2,238**	**2,494**	**3,030**

Source: VVA et al. (2023), Impact assessment support study

In the baseline scenario, the total costs for the EU flag State authorities for performing flag State inspections are projected to increase from EUR 2.5 million in 2021 to EUR 2.8 million in 2030 and EUR 3.8 million in 2050 (Table 17). The calculations draw on the projected number of inspections, the number of hours per inspection provided by the flag State administrations and the tariff per hour. For the six Member States that have implemented the e-certification register and reporting of e-certificates (Belgium, Denmark, Germany, Finland, Portugal and Cyprus) the hours per inspection provided by the flag State authorities for 2021 already reflect the uptake of digital solutions. For Malta, which is in the process of implementing the digital solutions, a 5% decrease in the time spent per inspection has been assumed from 2023 onwards based on input received during the stakeholders' consultation. The average tariff per hour at EU level for inspections performed by

[139] Slovenia as a coastal and port State has an administration dealing with coastal and port State issues and has a limited number of ships operating locally.

exclusive inspectors is estimated at EUR 148 and for inspections performed by non-exclusive inspectors at EUR 124 per hour, based on the information provided by flag State administrations during the consultation process. Only Cyprus, Malta and Luxembourg use non-exclusive inspectors[140].

Table 17: Projected costs for flag State administrations in the baseline scenario (EU), in 2021 prices

	2021	2030	2040	2050
AT	0	0	0	0
BE	55	63	68	83
BG	8	8	8	8
CZ	0	0	0	0
DK	141	162	180	219
DE	3	3	4	4
EE	0	0	0	0
IE	32	36	42	49
EL	192	219	246	299
ES	104	121	135	164
FR	35	40	44	54
HR	38	43	50	59
IT	110	125	139	172
CY	306	351	390	475
LV	17	18	20	24
LT	32	36	36	45
LU	50	60	71	88
HU	0	0	0	0
MT	1,076	1,170	1,310	1,588
NL	147	168	188	228
PL	69	76	76	96
PT	1	1	1	2
RO	0	0	0	0
SI	0	0	0	0
SK	0	0	0	0
FI	9	11	12	14
SE	65	76	85	103
Total	**2,491**	**2,787**	**3,106**	**3,775**

Source: VVA et al. (2023), Impact assessment support study

6. Impacts on costs by policy measure

This section explains the inputs used and provides the assessment on costs of the policy measures included in the policy options. The synergies between the policy measures included in the policy options are taken into account, and reflected in this section.

PM1: Incorporate the relevant flag State parts of the III-Code and maintain IMO Audit mandatory

Current EU legislation reflects the new international mandatory rules in a fragmented manner. Since Directive 2009/21/EC entered into force, the international environment has changed. In 2013, at the time of the IMO

[140] Cyprus made use of 6 non-exclusive inspectors (13% of the total number of inspectors), Malta of 77 (78% of the total number of inspectors) and Luxembourg of 27 non-exclusive inspectors (100% of the total number of inspectors).

adopting the III-Code, the Council adopted Council Decision 2013/268/EU[141] setting out the Union position that had to be followed by Member States in IMO. That in turn means that the III-Code was considered to be part of Union law[142]. Following the Council Decision 2013/268/EU, EU Member States as IMO members and contracting parties to the six mandatory IMO instruments[143] are required to "*use the provisions of the III-Code for implementation in the execution of their obligations and responsibilities*" contained in the mandatory instruments and "*subject to periodic audits by the IMO in accordance with the III-Code to verify compliance with and implementation*" of the mandatory instruments.

The IMO III-Code became mandatory on 1 January 2016. Parts 1 and 2 of the III-Code are particularly relevant for the flag States. Some sections of part 1 and 2 are already covered in full (i.e. records, improvement, delegation of authority, flag State investigations) or in part by EU legislation (e.g. objectives, improvement, implementation) and others need to be introduced (i.e. enforcement, flag State surveyors). Parts 3 and 4 of the III-Code are covered in EU legislation via the VTMIS Directive[144] and the port State control Directive[145].

The IMO Audit has also become mandatory since the adoption of the FSD under the III-Code, while the current corresponding provision in the FSD (article 7) requiring Member States to undergo the then voluntary IMO audit, ceased to be applicable. All Member States have undergone the IMO Audit and hence the implementation and associated costs are part of the baseline, as flag States agreed to be bound by the mandatory rules. There are no additional costs associated to this measure relative to the baseline, although the measure is expected to provide legal certainty by including the new international mandatory rules in the FSD in a consolidated manner.

PM2: Nominate European Commission/EMSA as observes at IMO Audits

EMSA is mandated to carry out visits to MS for verifying the implementation of the maritime safety acquis. Many such visits relate to what is also covered by the IMO audits. There is therefore a need to synchronise the EMSA visits with the IMO audits of MS, when they are performed. This provides synergies and transparency as well as enable better planning, to avoid duplication. As EMSA needs to perform such visits to MS and these are already foreseen and budgeted, they are already part of the baseline. PM2 only requires planning to ensure that such visits are back-to-back with the IMO audits, bearing in mind that about 3 MS will undergo the IMO audit per year in a 7 year cycle. Therefore, there are no costs associated to this measure relative to the baseline.

[141] OJ l. 155/3, 7.6.2013, Council Decision of 13 May 2013 on the position to be taken on behalf of the European Union within the International maritime Organisation (IMO) with regard to the adoption of certain Codes and related amendments to certain conventions and protocols

[142] As soon as the Union has adopted acts, like decisions under article 218(9) TFEU backing them, they become part of the Union acquis.

[143] IMSAS is made mandatory through the III Code, through amendments in six IMO instruments – SOLAS 1974 and its 1988 Protocol, MARPOL 73/78, COLREG 1972, STCW 1978 as amended, LL 1966 and its 1988 Protocol, and TONNAGE 1969. The amendments to these mandatory instruments entered into force on 1 January 2016 except for amendments to the LL Protocol and Tonnage 69 which entered into force on 28 February 2017 and 28 February 2018 respectively.

[144] Directive 2002/59/EC

[145] Directive 2009/16/EC

PM3: Establish a flag State expert group to promote cooperation between the Member States and the European Commission

Adjustment costs for the European Commission

The objective of PM3 is to create a mechanism for peer learning and knowledge sharing. The average cost for a two-day workshop hosted by European Commission (EC), where participants are reimbursed by the EC is around EUR 30,000. Therefore, an expert group meeting once to twice a year would cost between EUR 30,000 and EUR 60,000. This measure is assumed to be implemented starting from 2025. The ongoing adjustment costs for the European Commission for implementing PM3 are estimated at EUR 0.6 to 1.1 million relative to the baseline, expressed as present value over 2025-2050.

PM4: Modernise the way Flag State performance is measured

This measure involves defining a set of key performance indicators (KPIs), to show how EU flag States are performing with a view for them to identify weaknesses and allow improvements as part of continuous improvement. The definition of the KPIs will be part of an implementing act. A study has been already performed by the Commission[146] and a number of KPIs have been preliminary identified. These will be discussed with Member States and industry, in view of agreeing on a final set of KPIs. They are drawing on various publicly available data, put together into KPIs. The work on defining the KPIs will be pursued in the framework of the flag State expert group, set up in PM3. The Commission, with the support of EMSA, will be responsible for reporting on the KPIs. No significant costs are expected in relation to this measure, as the KPIs will draw on publicly available data.

PM5: Introduce a technical solution for use by the Member States requiring: (i) e-certificate registry, reporting of (ii) e-certificates, (iii) e-FS inspection reports, enabling the exchange and sharing of information between the Member States and with EU-wide systems (hosted in EMSA)

Adjustment costs for flag State administrations

The quantification of costs for PM5 is made under the assumptions that: (i) the digitalisation of flag States administrations is implemented in parallel to that of port States administrations, both in terms of digitalisation at Member State level and in terms of tools and services provided by EMSA; (ii) the system foreseen to be developed by EMSA consists of a platform to store, upload, exchange, control and inspect certificates but would not serve issuance purposes, which remains the responsibility of flag State administrations or the Recognised Organisations that issue certificates on their behalf.

The ***e-certification registry and reporting of e-certificates*** provides the official inventory of merchant vessels under the jurisdiction of a flag State and the reporting of e-certificates. So far, 6 Member States have implemented the e-certification register and reporting of e-certificates (Belgium, Denmark, Germany, Finland, Portugal and Cyprus) and Malta is in the process of implementing it. Few Member States such as Austria, Czech Republic, Hungary, Slovakia and Slovenia[147] do not have an active register or convention ships flying their flag any longer, and do not have to put in place an e-certification registry. In addition, 5 Member States do not issue e-certificates themselves but have delegated this function to Recognised Organisations (RO) to do it on their behalf (Cyprus, Croatia, Greece, Luxembourg, the Netherlands), and do

[146] Possible refinement of Flag State performance indicators for assessing Member State as Flag States (Directive 2009/15/EC) - Contract SI2.754568 – WM https://commission.europa.eu/publications_en.

[147] Slovenia as a coastal and port State has an administration dealing with coastal and port State issues and has a limited number of ships operating locally.

not need to put in place an e-certification registry and reporting of e-certificates. Thus, this measure is relevant for 11 Member States (Bulgaria, Estonia, France, Italy, Ireland, Lithuania, Latvia, Spain, Poland, Romania and Sweden). The one-off capital costs are estimated by EMSA at EUR 300,000 per flag State administration in 2025 and the annual costs for maintenance at EUR 100,000 per flag State administration from 2026 onwards. At the EU level, the one-off capital costs in 2025 are estimated at EUR 3.3 million, and the maintenance costs at EUR 1.1 million per year from 2026 onwards. The total additional adjustment costs for flag State administrations relative to the baseline for e-certification registry and reporting of e-certificates are thus estimated at EUR 22.5 million expressed as present value over 2025-2050, of which EUR 3.3 million one-off costs.

The ***e-FS inspection report*** is a system that generates a tailored checklist based on the type of ship and has a digital environment that allows to fill in the checklist on the field with an app or in the office after the inspection with a web-based application. The system can automatically make available the reports to flag State administrations after an inspection, making the process more efficient. A mandatory requirement for e-FS inspection reports is already in place for EU flag States of RO-PAX ships and High Speed Craft. The RO-PAX ships and High Speed Craft represented around 15% of the EU flagged fleet in 2021. No additional costs are expected for flag State administrations for extending the e-FS inspection report to all EU flagged ships. The template to be used will be designed and agreed in the context of the expert group foreseen under PM3. The technical possibility to produce electronic checklists is already available through the RuleCheck system, which is made available by EMSA and already used by all EU flag State administrations.

Adjustment costs for EMSA

No costs are foreseen for EMSA in relation to ***e-certification registry***, as the Agency already has a functional web-interface that is used by the Recognised Organisations. This web-interface will also be used for the flag States reporting e-certificates.

In relation to the ***reporting of e-certificates***, the proposed revision of the PSC Directive foresees the development and maintenance at EU level of a common system for use of electronic certificates across flag States and RO for the use of port State control, as well as tools for validation and inspection. In PM5, EMSA would build upon this system to create a new module in the THETIS environment. This new module will allow flag State administrations to upload, exchange, validate and control e-certificates. The same system will also be used by the ROs. The development of the new module is estimated by EMSA to lead to one-off capital costs of EUR 250,000 in 2025, and maintenance costs of EUR 125,504 per year (1 full time equivalent) from 2025 onwards. Expressed as present value over 2025-2050, the adjustment costs for EMSA relative to the baseline are estimated at EUR 2.6 million of which EUR 0.3 million one-off costs.

Extending the ***e-FS inspection report*** to all EU flagged ships would require setting up a THETIS module by EMSA. Building on the experience with the RO-PAX reporting module in THETIS, EMSA estimates one-off capital costs of EUR 100,000 in 2025. By using the EMSA hosted systems, the exchange and sharing is already ensured. No extra cost are foreseen as all systems are already interoperable.

Total adjustment costs for EMSA for implementing PM5 are estimated at EUR 2.7 million expressed as present value over 2025-2050 (in 2021 prices), relative to the baseline, of which EUR 0.4 million one-off costs in 2025.

Enforcement costs savings for flag State administrations

The implementation of an ***e-certification registry*** system allows for easier access and more flexible case management, as well as improved availability of ship data and performance data. One of the flag State

administrations implementing the system estimated that the time saving due to the e-certification registry is roughly 650 hours per year, or 1.2 hours per year per ship. The share of ships that is covered by the e-Registry system (flagged in Belgium, Cyprus, Denmark, Germany, Finland, Portugal and Malta) is estimated at 55.4%.

The e-certification registry is assumed to be implemented in 2025 but the cost savings would occur starting from 2026 onwards. The measure is also expected to benefit Member States that have delegated this function to Recognised Organisations, thanks to easier access and more flexible case management, as well as improved availability of ship data and performance data. Table 18 provides the number of EU-flagged vessels not covered by the e-certification registry system in the baseline and the cost savings generated by the implementation of the measure relative to the baseline, assuming 1.2 hours saved per year per ship. To estimate the costs savings, the tariffs per hour from the Eurostat Structure of earnings survey, Labour Force Survey data for Non-Wage Labour Costs (i.e. ISCO 3 – technicians and associate professionals) have been used (31.1 EUR per hour on average at EU level, in 2021 prices). In terms of present value over 2025-2050, the implementation of the e-Registry system is estimated to lead to enforcement costs savings for the flag State administrations of EUR 2.6 million (in 2021 prices).

Table 18: Enforcement cost savings for flag State administrations relative to the baseline due to the implementation of the e-certification registry, in 2021 prices

	2026	2030	2040	2050
Number of EU-flagged vessels not covered by the e-certificate registry system in the baseline	3,983	4,139	4,619	5,609
Cost savings due to the implementation of the e-certificate registry system (EUR)	130,469	135,826	151,926	184,566

Source: VVA et al. (2023), Impact assessment support study

According to the flag State authorities interviewed, the ***reporting of e-certificates*** has a positive effect on the operations of the flag State administrations by improving processes - both internal for the administration and external for customers and end-users. The system makes the process more efficient with less documentation requirements, and allows for better accessibility and ownership of data and certificates for the users.

According to one of the flag State authorities that implement the system, ***reporting of e-certificates*** leads to cost savings of 1 hour per certificate per year. On average, each vessel needs around 20 certificates per year.

The reporting of e-certificates is assumed to be implemented in 2025 but the cost savings would occur starting from 2026 onwards. Table 19 provides the number of EU-flagged vessels not covered by the e-certificates system in the baseline, the number of certificates needed by EU-flagged vessels that have not implemented the system (assuming 20 certificates per vessel) and the cost savings generated by the implementation of the reporting of e-certificates relative to the baseline, assuming 1 hours saved per year per certificate.

Table 19: Enforcement cost savings for flag State administrations relative to the baseline due to the implementation of thereporting of e-certificates, in 2021 prices

	2026	2030	2040	2050
Number of EU-flagged vessels that do not use the e-certificates in the baseline	3,983	4,139	4,619	5,609
Number of certificates needed by EU-flagged vessels that do not use e-certificates in the baseline	79,660	82,780	92,380	112,180
Cost savings due to the implementation of e-certificates (EUR)	2,127,648	2,215,006	2,477,561	3,009,840

Source: VVA et al. (2023), Impact assessment support study

The enforcement costs savings by flag State administration relative to the baseline are provided in Table 20.

Table 20: Enforcement cost savings by flag State administration relative to the baseline due to the reporting of e-certificates, in 2021 prices

	2026	2030	2040	2050
Cost savings due to the implementation of e-certificates (EUR)	2,127,648	2,215,006	2,477,561	3,009,840
BG	2,223	2,223	2,223	2,223
EE	9,635	9,635	9,635	12,555
IE	48,720	51,586	58,750	69,497
EL	360,345	374,421	418,408	508,143
ES	118,988	124,816	139,386	168,526
FR	181,133	189,590	210,734	256,546
HR	73,026	75,604	85,269	103,526
IT	453,286	470,792	527,062	639,602
LV	10,724	10,724	11,889	14,221
LT	7,325	7,325	7,325	9,253
LU	39,443	42,599	50,487	62,320
NL	583,315	606,190	677,674	824,218
PL	8,260	8,260	8,260	10,325
RO	1,681	1,681	1,681	1,681
SE	229,545	239,561	268,776	327,205

Source: VVA et al. (2023), Impact assessment support study

In terms of present value over 2025-2050, the implementation of the e-certificates system is estimated to lead to enforcement costs savings for the EU flag State administrations of EUR 42.1 million relative to the baseline (in 2021 prices).

For the ***e-FS inspection reports***, the calculation of the enforcement costs savings for the flag State administrations draws on the number of flag State inspections performed per year. Based on the online survey conducted among flag State authorities, the implementation of the e-FS inspection reports system could reduce the number of hours per inspection by 5% to 10%. An inspection takes on average 9.7 hours. Based on this information, a reduction of 0.5 (low) to 1 (high) hours has been applied relative to the baseline to the inspections performed by all flag State administrations, except for those that do not have an active register any longer.

For PO1 and PO4, Table 21 provides the number of FS inspections in the baseline, relevant for these policy options, and the enforcement costs savings relative to the baseline for 2026, 2030, 2040 and 2050. In terms of present value over 2025-2050, the implementation of the e-FS inspection report system in PO1 and PO4 is estimated to lead to enforcement costs savings for the flag State administrations of EUR 3.1 to 6.1 million (in 2021 prices).

Table 21: Enforcement cost savings for flag State administrations relative to the baseline due to the implementation of the e-FS inspection report system in PO1 and PO4 (in 2021 prices)

	2026	2030	2040	2050
Number of FS inspections	2,154	2,238	2,494	3,030
Costs savings relative to the baseline (EUR)				
Low	154,878	160,918	179,325	217,865
High	309,756	321,836	358,650	435,729

In PO2, the measure PM10 (Introduce specific requirement regarding inspections, commensurate with the size and type of fleet) leads to an increase in the number of inspections relative to the baseline. This increase in the number of inspections also need to be taken into account when estimating the enforcement costs savings due to PM5. For PO2, Table 22 provides the number of FS inspections and the enforcement costs savings relative to the baseline for 2026, 2030, 2040 and 2050. In terms of present value over 2025-2050, the implementation of the e-FS inspection report system in PO2 is estimated to lead to enforcement costs savings for the flag State administrations of EUR 4.1 to 8.2 million (in 2021 prices).

Table 22: Enforcement cost savings for flag State administrations relative to the baseline due to the implementation of the e-FS inspection report system in PO2 (in 2021 prices)

	2026	2030	2040	2050
Number of FS inspections	2,893	3,007	3,353	4,072
Costs savings relative to the baseline (EUR)				
Low	208,014	216,211	241,089	292,787
High	416,028	432,422	482,179	585,574

Source: VVA et al. (2023), Impact assessment support study

In PO3, the measure PM11a (Require FS to do the International Safety Management audit and issue ISM Certificates, combined with a number of FS inspections to be performed) leads to an increase in the number of inspections relative to the baseline. This increase in the number of inspections also need to be taken into account when estimating the enforcement costs savings due to PM5. For PO3, Table 23 provides the number of FS inspections and the enforcement costs savings relative to the baseline for 2026, 2030, 2040 and 2050. In terms of present value over 2025-2050, the implementation of the e-FS inspection report system in PO2 is estimated to lead to enforcement costs savings for the flag State administrations of EUR 3.3 to 6.6 million (in 2021 prices).

Table 23: Enforcement cost savings for flag State administrations relative to the baseline due to the implementation of the e-FS inspection report system in PO3 (in 2021 prices)

	2026	2030	2040	2050
Number of FS inspections	2,320	2,411	2,687	3,263
Costs savings relative to the baseline (EUR)				
Low	166,814	173,357	193,202	234,618
High	333,628	346,714	386,404	469,236

Source: VVA et al. (2023), Impact assessment support study

Total enforcement costs savings for flag State administrations for implementing PM5 in PO1 and PO4, relative to the baseline, are estimated at EUR 47.7 to 50.8 million expressed as present value over 2025-2050 (in 2021 prices).

For implementing PM5 in PO2, total enforcement costs savings for flag State administrations are estimated at EUR 48.8 to 52.9 million expressed as present value over 2025-2050 (in 2021 prices), relative to the baseline.

Total enforcement costs savings for flag State administrations for implementing PM5 in PO3, relative to the baseline, are estimated at EUR 48 to 51.3 million expressed as present value over 2025-2050 (in 2021 prices).

Adjustment costs savings for ship operators

Shipowner organisations interviewed acknowledged that introducing digital solutions can reduce the adjustment costs for ship operators and their crews. In particular, the e-FS inspection report system would reduce the waiting time for the vessels being inspected (i.e. the cooperation time foreseen for FS inspections).

Waiting time could be reduced by 0.1 (low) to 0.2 (high) hours per vessel inspected relative to the baseline[148]. The cost of waiting per hour for vessels is estimated at 103.8 EUR (in 2021 prices)[149] and is assumed to remain constant over time in real prices.

For PO1 and PO4, Table 24 shows the adjustment costs savings for ship operators due to the reduction in the waiting time for vessels considering the baseline number of inspections (which is relevant for PO1 and PO4). In terms of present value over 2025-2050, the adjustment costs savings for ship operators are estimated at EUR 0.4 to 0.9 million (in 2021 prices).

Table 24: Adjustment cost savings for ship operators relative to the baseline due to the implementation of the e-FS inspection report system in PO1 and PO4 (in 2021 prices)

	2026	2030	2040	2050
Number of ships inspected	2,154	2,238	2,494	3,030
Costs savings due to the reduction in the waiting time (EUR)				
Low	22,360	23,232	25,890	31,454
High	44,721	46,465	51,780	62,908

Source: VVA et al. (2023), Impact assessment support study

For PO2, the measure PM10 (Introduce specific requirement regarding inspections, commensurate with the size and type of fleet) leads to an increase in the number of inspections relative to the baseline. This increase in the number of inspections also need to be taken into account when estimating the adjustment costs savings for ship operators due to PM5. For PO2, Table 25 shows the adjustment costs savings for ship operators due to the reduction in the waiting time for vessels considering the number of inspections in PO2. In terms of present value over 2025-2050, the adjustment costs savings for ship operators are estimated at EUR 0.6 to 1.2 million (in 2021 prices).

Table 25: Adjustment cost savings for ship operators relative to the baseline due to the implementation of the e-FS inspection report system in PO2 (in 2021 prices)

	2026	2030	2040	2050
Number of ships inspected	2,893	3,007	3,353	4,072
Costs savings due to the reduction in the waiting time (EUR)				
Low	30,032	31,215	34,807	42,271
High	60,063	62,430	69,614	84,541

Source: VVA et al. (2023), Impact assessment support study

For PO3, the measure PM11a (Require FS to do the International Safety Management audit and issue ISM Certificates, combined with a number of FS inspections to be performed) leads to an increase in the number of inspections relative to the baseline. This increase in the number of inspections also need to be taken into account when estimating the adjustment costs savings for ship operators due to PM5. For PO3, Table 26 shows the adjustment costs savings for ship operators due to the reduction in the waiting time for vessels considering the number of inspections in PO3. In terms of present value over 2025-2050, the adjustment costs savings for ship operators are estimated at EUR 0.5 to 1 million (in 2021 prices).

[148] The waiting time per vessel inspected is estimated at 2 hours in the baseline. Following the stakeholders' feedback, the implementation of digital solutions would reduce the waiting time per vessel by 5 to 10%.

[149] Based on data from the Netherlands Institute for Transport Policy Analysis, which provides a breakdown of main cost categories for maritime transport industry.

Table 26: Adjustment cost savings for ship operators relative to the baseline due to the implementation of the e-FS inspection report system in PO3 (in 2021 prices)

	2026	2030	2040	2050
Number of ships inspected	2,320	2,411	2,687	3,263
Costs savings due to the reduction in the waiting time (EUR)				
Low	24,084	25,028	27,893	33,873
High	48,167	50,056	55,787	67,745

Source: VVA et al. (2023), Impact assessment support study

PM6: Develop a mechanism and template for reporting information and statistics

Adjustment costs for EMSA

PM6 will be based on the Dynamic Overview of National Authorities (DONA), which is a voluntary e-reporting gate allowing agreed reporting using templates. Further development of DONA for allowing reporting of information and statistics under FS Directive, is estimated by EMSA to lead to one-off capital costs of EUR 150,000 in 2025.

In terms of maintenance, EMSA has already established the Maritime Support Services (MSS) centre which is a 24/7 facility located at EMSA's premises in Lisbon. The MSS offers round-the-clock support to ensure two main functions: the smooth running of EMSA's maritime applications and providing rapid assistance in the event of an emergency at sea. To this end, the MSS is operated by officers with specialist IT skills and maritime knowledge. MSS can support any new tool in the same manner that it supports all other maritime applications developed by the Agency. It is estimated that EUR 125,504 per year (1 full time equivalent) would be needed for maintenance of the tools from 2025 onwards.

Total adjustment costs for EMSA for implementing PM6, relative to the baseline, are estimated at EUR 2.5 million expressed as present value over 2025-2050 (in 2021 prices), of which one-off costs of EUR 0.2 million.

PM6 would provide benefits in terms of peer learning and knowledge sharing, and could provide tools for EMSA and the Commission to monitor the performance of the FS administrations.

PM7: Specify EU Oversight programme of flagged fleet and RO's

Enforcement costs for flag State administrations

Regarding the flagged fleet and Recognised Organisations (ROs) monitoring, the establishment and implementation of a thorough oversight system of ROs is the obligation of the flag States which delegated their statutory authority, and this obligation is subject to audit under IMSAS.

In line with the international requirements, ROs can carry out surveys and issue or endorse Statutory Certificates of ships on behalf of a flag State. The current EU legislation, incorporating the IMO RO Code (Commission Implementing Regulation (EU) No 1355/2014 and Directive 2014/111/EU), provides the rules by which flag States may authorize ROs to act on their behalf. Included in both the III-Code and in the RO-Code, are the requirements for flag States to establish a system to ensure the adequacy of work performed by the ROs, including monitoring and verification of class related matters. According to the EU law the flag State administrations have to report on their monitoring every 2 years.

As required by the III-Code and the RO-Code, ROs should be subject to the oversight and monitoring programme established by flag States for ensuring the quality of performance carried out by them. It leaves no room for doubt that each flag State has a sovereign right to supervise its ROs and each RO should accept the supervision of the flag State which delegated its statutory authority. To address the matter of burden for audits, the RO-Code includes a provision for combined oversight. According to part III 7.2.2.2 of the Code, it is allowed for flag States to carry out oversight of their common ROs conjunctionally with other States.

The current EU system of oversight of ROs is established by Directive 2009/15/EC and Regulation (EC) No 391/2009. The quality of ROs is hence already regulated and (in part) monitored. However, this only requires flag State administrations to monitor 'their' ROs but there is no systematic way to share this information or any findings, nor any synchronisation allowing better use of such resources in the EU MS for such RO oversight.

There are significant differences in the practices of flag State administrations. Of the flag State administrations interviewed, for 12 of them the monitoring frequency is every two years, for one of them every five years and only 6 flag State administrations adopt a continuous monitoring. In the baseline scenario, it is assumed that the current practice continues over time. For the 3 flag State administrations that did not reply the monitoring frequency has been assumed to be every two years. The results of the online survey showed that flag State administrations spend between 30 and 60 hours every year in monitoring ROs.

PM7 aims to specify an EU oversight programme of the flagged fleet and RO's based on the requirements of the III-Code. The EU oversight programme will be established in the context of the FS expert group. As example, in PM7 we assume imposing the requirement of continuous monitoring, as it currently happens in 6 Member States. In the baseline scenario it is assumed that the current practices continue over time, with 12 Member States maintaining the monitoring frequency to two years, 1 Member State to five year and 6 Member States performing continuous monitoring. The time spent by flag State administration in monitoring ROs has been assumed to be between 30 hours (low) and 60 hours (high) per year. Table 27 shows the enforcement costs for flag State administrations for monitoring ROs in the baseline and the additional enforcement costs for implementing PM7.

Table 27: Enforcement costs for flag State administrations relative to the baseline due to the implementation of PM7, in 2021 prices

	2025	2026	2030	2040	2050
Total monitoring costs in the baseline (EUR)					
Low	20,542	5,602	6,536	6,536	6,536
High	41,084	11,205	13,072	13,072	13,072
Additional monitoring costs relative to the baseline (EUR)					
Low	0	14,940	14,006	14,006	14,006
High	0	29,879	28,012	28,012	28,012

Source: VVA et al. (2023), Impact assessment support study

Total enforcement costs for flag State administrations for implementing PM7, relative to the baseline, are estimated at EUR 0.1 to 0.3 million expressed as present value over 2025-2050 (in 2021 prices).

The standardization and harmonization of current practices is expected to improve how oversight over ROs is conducted and it is expected to minimize conflicting practices which may evolve divergently among Member States.

PM8: Introduce common capacity building and harmonised training (post-qualification) for Flag State inspectors / surveyors / auditors

Adjustment costs for EMSA

PM8 aims at promoting capacity building and harmonised training (post-qualification) for Flag State inspectors / surveyors / auditors. Out of 14 flag State administrations that replied to the question on training in the context of the stakeholders' consultation, 9 flag State administrations don't provide any training at all. The capacity building and harmonised training by EMSA would overcome this deficiency in these 9 Member States. In addition, capacity building and harmonised training by EMSA can provide significant synergies, by reducing the needs to have a dedicated budget for training in each Member State[150]. In addition, PM8 would provide benefits in terms of a common core curricula for Flag State inspectors, which will in turn help to a common understanding and implementation of international/EU rules.

According to EMSA, the training costs are estimated at EUR 70,000 to 100,000 per year, including the reimbursement of participants. In PM8 they are assumed to be implemented from 2025 onwards. Total adjustments costs for EMSA for implementing PM8, relative to the baseline, are estimated at EUR 1.3 to 1.8 million expressed as present value over 2025-2050 (in 2021 prices).

PM9a: Define flag State inspector to prevent the use of non-exclusive technical staff

According to the replies to a questionnaire by flag State administrations in the context of the stakeholder consultation, only 3 flag State administrations made use of non-exclusive inspectors in 2021: Cyprus, Malta and Luxembourg. Cyprus made use of 6 non-exclusive inspectors (13% of the total number of inspectors), Malta of 77 (78% of the total number of inspectors) and Luxembourg of 27 non-exclusive inspectors (100% of the total number of inspectors). The average cost per hour of inspection by a non-exclusive inspector is estimated at EUR 124, while the cost per hour of inspection for an exclusive inspector at EUR 148. The average number of hours for an inspection performed by an exclusive inspector is also higher than that for a non-exclusive inspector.

In the baseline scenario, 891 inspections are estimated to be performed by non-exclusive inspectors in CY, LU and MT in 2030, going up to 1,001 in 2040 and 1,216 in 2050. The split of inspections between those performed by exclusive and non-exclusive inspectors is performed based on the share of non-exclusive inspectors in the total number of inspectors. The costs of inspections by non-exclusive inspectors in the baseline and the additional costs for performing these inspections by exclusive inspectors instead of non-exclusive inspectors, implementing PM9a, are provided in Table 28. The estimation of the costs also takes into account the reduction in the hours per inspection due to PM5.

Total adjustments costs for the flag State administrations for implementing PM9a, relative to the baseline, are estimated at EUR 4.9 million expressed as present value over 2025-2050 (in 2021 prices) in PO1, PO3 and PO4.

[150] PM8 may however add on top of existing training courses provided by Member States, if Member States desire to continue so. This measure aims at promoting additional knowledge sharing and peer learning.

Table 28: Adjustment costs for flag State administrations relative to the baseline due to the implementation of PM9a, in 2021 prices

	2025	2030	2040	2050
Total number of inspections performed by non-exclusive inspectors in the baseline	845	891	1,001	1,216
CY	32	33	37	45
LU	54	60	71	88
MT	759	798	893	1,083
Costs of inspections performed by non-exclusive inspectors in the baseline	881,509	929,615	1,044,169	1,268,298
CY	19,917	20,539	23,029	28,008
LU	53,776	59,751	70,705	87,635
MT	807,816	849,325	950,435	1,152,655
Additional costs of inspections being performed by exclusive inspectors instead of non-exclusive inspectors (EUR)	233,677	245,413	274,961	333,698
CY	24,915	25,693	28,807	35,036
LU	3,865	4,294	5,081	6,298
MT	204,898	215,426	241,072	292,364

Source: VVA et al. (2023), Impact assessment support study

PM9a will provide benefits in terms of legal certainty and harmonization of the current practices among Member States.

PM9b: Frame when non-statutory staff can be used and for what inspections

PM9b aims at formalising the status quo by framing, for example, what type of inspections such non-statutory staff can perform e.g. cannot perform Statutory surveys but can perform some types of flag State inspections in a given circumstance. This is not expected to increase costs relative to the baseline for flag States administrations. However, PM9b will provide benefits in terms of legal certainty, clarity and harmonization of the current practices among Member States.

PM10: Introduce specific requirement regarding inspections, commensurate with the size and type of fleet

Adjustment costs for flag State administrations

PM10 aims at introducing specific requirements for the number of inspections to be performed, commensurate with the size and type of fleet. This should also provide incentives to flag State administrations to allocate "appropriate resources" to inspections. The definition of "appropriate resources" will be decided at the later stage, through a delegated act, but may include indicators such as: size of the fleet, age of the fleet, share of the fleet to be inspected per year and number of flag State inspectors. In PM10, the share of EU flagged vessels to be inspected is set at 25% per year, which means that over a four year[151] period all EU Member State flagged fleet would be inspected. In the baseline scenario, around 24% of the EU flagged vessels were inspected in 2021[152] and this share is assumed to remain constant over time. 13 flag State administrations inspected less than 25% of their flagged fleet in 2021 (BE, DK, DE, EE, EL, FR, HR, IT, NL,

[151] This approach builds on the fact that any convention vessel has to undergo a special survey every five years (normally including dry-docking), which is a major check (and possible demands repairs and upgrades) normally involving the flag State.

[152] 26% on average per year during 2016-2021.

PT, RO, FI, SE), although for DK and BE the share was only marginally lower than 25% (by 1 percentage point and 2 percentage points, respectively).

The increase in the number of inspections relative to the baseline due to PM10 is provided in Table 29. To calculate the additional costs for inspections the hours per inspection and the tariff per hour of inspection (EUR 148 per hour on average at EU level) have been used. The additional costs for inspections relative to the baseline are estimated at EUR 1.3 million in 2030 and EUR 1.8 million in 2050.

Table 29: Adjustment costs for flag State administrations relative to the baseline due to the implementation of PM10, in 2021 prices

	2025	2030	2040	2050
Number of FS inspections in the baseline	2,132	2,238	2,494	3,030
Additional number of inspections relative to the baseline	734	769	859	1,042
Additional costs for inspections relative to the baseline (EUR)	1,268,682	1,327,959	1,483,278	1,800,116

Source: VVA et al. (2023), Impact assessment support study

Table 30 provides the number of additional inspections and the costs for additional inspections relative to the baseline, by flag State administration.

Table 30: Adjustment costs by flag State administration relative to the baseline due to the implementation of PM10, in 2021 prices

	Additional number of inspections		Additional costs for inspections (EUR)	
	2030	2050	2030	2050
BE	3	4	7,561	10,081
DK	6	9	6,671	10,007
DE	76	101	112,672	149,735
EE	8	11	11,524	15,846
EL	81	109	96,068	129,276
FR	13	18	9,636	13,343
HR	70	96	166,043	227,716
IT	146	198	432,898	587,081
NL	109	148	177,755	241,355
PT	207	281	245,506	333,272
RO	2	2	2,965	2,965
FI	34	46	40,325	54,557
SE	14	19	18,334	24,882
Total	769	1042	1,327,959	1,800,116

Source: VVA et al. (2023), Impact assessment support study

Total adjustments costs for flag State administrations (recurrent costs) for implementing PM10, relative to the baseline, are estimated at EUR 26.5 million expressed as present value over 2025-2050 (in 2021 prices).

Adjustment costs for ship operators

The increase in the number of inspections relative to the baseline has an impact on the waiting time for the vessels being inspected (i.e. the cooperation time foreseen for FS inspections) and thus is expected to result in

adjustment costs for ship operators. Waiting time is estimated at 2 hours per vessel inspected in the baseline. The cost of waiting per hour for vessels is estimated at 103.8 EUR (in 2021 prices)[153] and is assumed to remain constant over time in real prices. The adjustment costs for ship operators in 2025, 2030, 2040 and 2050 relative to the baseline are provided in Table 31.

Table 31: Adjustment costs for ship operators relative to the baseline due to the implementation of PM10, in 2021 prices

	2025	2030	2040	2050
Additional number of ships inspected relative to the baseline	734	769	859	1,042
Adjustment costs for ship operators (EUR)	152,390	159,657	178,342	216,336

Source: VVA et al. (2023), Impact assessment support study

Total adjustments costs for ship operators (recurrent costs) for implementing PM10, relative to the baseline, are estimated at EUR 3.2 million expressed as present value over 2025-2050 (in 2021 prices).

PM11a: Require FS to do the International Safety Management (ISM) audit and issue ISM Certificates (Statutory), combined with a number of FS inspections to be performed

Adjustment costs for flag State administrations

PM11 (PM11a and PM11b) requires flag State administrations to maintain and perform activities that they may have delegated to ROs. More specifically, PM11a requires FS to perform the International Safety Management (ISM) audit and issue ISM Certificates. As this is statutory work leading to certification, this allows the FS to decide how many and to what extent they do additional flag State inspections (not leading the certification). PM11a additionally requires a number of FS inspections to be performed per year. The share of EU flagged vessels to be inspected is set at 10% per year, which means that over a ten year[154] period all EU Member State flagged fleet would be inspected.

The ISM Code is a chapter in SOLAS and the requirements of the ISM Code apply to all commercial ships over 500 GT. In order to comply with the ISM Code, a company operating a vessel has first to be audited. This takes place after they submit their Safety Management System Manual (SMS) and it is approved by the flag State administration or the Recognised Organisation (RO). Once a company is audited, the Document of Compliance (DOC) is issued. The validity of such document is 5 years. Every company is subject to auditing every year (three months before and after anniversary date and before DOC expiration date). Each vessel is being issued a SMC (Safety Management Certificate) valid for 5 years and subject to verification of Compliance with ISM Code between second and third years of certificate validity. This translates into an effort of auditing each flagged vessel every five years by the responsible flag State authority.

In the baseline scenario, 4 flag State administrations (BE, BG, FR and PL) have already implemented the ISM audit. Three other flag State administrations (ES, IT and DE) issue the certificates themselves and should already have trained staff to do the ISM audits. Therefore, PM11a is relevant for 15 flag State administrations (DK, EE, IE, EL, HR, CY, LV, LT, LU, MT, NL, PT, RO, FI, SE). Drawing on the results of the online stakeholders' survey, it is assumed that it takes around 10 hours to perform the ISM Audit. The ISM audit costs are derived drawing on the projected number of flagged vessels, the number of hours per audit and the

[153] Based on data from the Netherlands Institute for Transport Policy Analysis, which provides a breakdown of main cost categories for maritime transport industry.

[154] This approach builds on the fact that any convention vessel has to undergo a special survey every five years (normally including dry-docking), which is a major check (and possible demands repairs and upgrades) normally involving the flag State.

tariff rates per hour. To estimate the costs savings, the tariffs per hour from the Eurostat Structure of earnings survey, Labour Force Survey data for Non-Wage Labour Costs (i.e. ISCO 3 – technicians and associate professionals) have been used (31.1 EUR per hour on average at EU level, in 2021 prices). The ISM is assumed to be implemented every 5 years. Table 32 provides the adjustment costs relative to the baseline in 2025, 2030, 2040 and 2050.

Table 32: Adjustment costs for flag State administrations relative to the baseline due to the implementation of the ISM audit, in 2021 prices

	2025	2030	2040	2050
Number of vessels in MS that have to implement the ISM audit	7,164	7,524	8,409	10,209
Costs related to the ISM audit for FS administrations, relative to the baseline (EUR)	2,229,754	2,341,802	2,617,253	3,177,492

Source: VVA et al. (2023), Impact assessment support study

Total adjustments costs for flag State administrations (recurrent costs) for implementing the ISM audit, relative to the baseline, are estimated at EUR 14.5 million expressed as present value over 2025-2050 (in 2021 prices).

With regard to the number of inspections, in the baseline scenario 7 flag State administrations inspected less than 10% of their flagged fleet in 2021 (DE, EE, HR, IT, PT, RO, FI).

The increase in the number of inspections relative to the baseline due to PM11a is provided in Table 33. To calculate the additional costs for inspections the hours per inspection and the tariff per hour of inspection (EUR 148 per hour on average at EU level) have been used. The additional costs for inspections relative to the baseline are estimated at EUR 0.3 million in 2030 and EUR 0.4 million in 2050. Expressed as present value over 2025-2050 (in 2021 prices), relative to the baseline, the costs are estimated at EUR 5.9 million.

Table 33: Adjustment costs for flag State administrations relative to the baseline due to the requirement on the number of inspections, in 2021 prices

	2025	2030	2040	2050
Number of FS inspections in the baseline	2,132	2,238	2,494	3,030
Additional number of inspections relative to the baseline	166	173	193	233
Additional costs for inspections relative to the baseline (EUR)	283,333	293,711	327,809	394,777

Source: VVA et al. (2023), Impact assessment support study

Table 34 provides the number of additional inspections and the costs for additional inspections in PM11a relative to the baseline in 2030 and 2050, by flag State administration.

Table 34: Adjustment costs by flag State administration relative to the baseline due to the requirement on the number of inspections, in 2021 prices

	Additional number of inspections		Additional costs for inspections (EUR)	
	2030	2050	2030	2050
DE	29	39	42,993	57,819
EE	3	4	4,322	5,762
HR	17	23	40,325	54,557
IT	33	44	97,847	130,462
PT	82	111	97,254	131,648
RO	1	1	1,483	1,483

	Additional number of inspections		Additional costs for inspections (EUR)	
	2030	2050	2030	2050
FI	8	11	9,488	13,046
Total	173	233	293,711	394,777

Source: VVA et al. (2023), Impact assessment support study

Total adjustments costs for flag State administrations (recurrent costs) for implementing PM11a (the ISM audit and the requirement on the number of FS inspections to be performed), relative to the baseline, are estimated at EUR 20.4 million expressed as present value over 2025-2050 (in 2021 prices).

Adjustment costs for ship operators

The increase in the number of inspections relative to the baseline has an impact on the waiting time for the vessels being inspected (i.e. the cooperation time foreseen for FS inspections) and thus is expected to result in adjustment costs for ship operators. Waiting time is estimated at 2 hours per vessel inspected in the baseline. The cost of waiting per hour for vessels is estimated at 103.8 EUR (in 2021 prices)[155] and is assumed to remain constant over time in real prices. The adjustment costs for ship operators in 2025, 2030, 2040 and 2050 relative to the baseline are provided in Table 35.

Table 35: Adjustment costs for ship operators relative to the baseline due to the implementation of PM11a, in 2021 prices

	2025	2030	2040	2050
Additional number of ships inspected relative to the baseline	166	173	193	233
Adjustment costs for ship operators (EUR)	34,464	35,918	40,070	48,375

Source: VVA et al. (2023), Impact assessment support study

Total adjustments costs for ship operators (recurrent costs) for implementing PM11a, relative to the baseline, are estimated at EUR 0.7 million expressed as present value over 2025-2050 (in 2021 prices).

PM11b: Require full statutory survey by FS when a 'high risk' ship wish to register under a MS flag

Regarding PM11b, a total of 226 EU flagged ships have been recorded as being of "high risk" in 2019, according to data from EMSA[156]. They represented 2.8% of the EU flagged fleet in 2019. Of those, 5 were transferring flag between EU Member States and 9 from non-EU to EU flags. These 14 ships represented 0.2% of the EU flagged fleet in 2019. The share of "high risk" ships in the EU flagged fleet and of those transferred between EU MS and from non-EU to EU flags is assumed to remain constant over time in the baseline scenario. PM11b requires full statutory survey by FS when a 'high risk' ship wishes to register under an EU MS flag. PM11b results in an increase in the number of statutory FS inspections. Drawing on the online stakeholders' survey, a flag State statutory survey is estimated to take 35 to 50 hours or 42.5 hours on average. Table 36 provides the adjustment costs relative to the baseline in 2025, 2030, 2040 and 2050.

Total adjustments costs for flag State administrations (recurrent costs) for implementing PM11b, relative to the baseline, are estimated at EUR 0.4 million expressed as present value over 2025-2050 (in 2021 prices).

[155] Based on data from the Netherlands Institute for Transport Policy Analysis, which provides a breakdown of main cost categories for maritime transport industry.

[156] The figure reflects the individual number of EU flagged ships that have called an EU port in 2019, and which at the time of arrival, were calculated by the THETIS (PSC) system as being of "High Risk Ship".

Table 36: Adjustment cost for flag State administrations relative to the baseline due to the implementation of PM11b, in 2021 prices

	2025	2030	2040	2050
Number of high risks ships that require full statutory survey	15	16	18	22
Adjustment costs for flag State administrations relative to the baseline (EUR)	19,842	21,165	23,810	29,101

Source: VVA et al. (2023), Impact assessment support study

1. Benefits in terms of avoided number of fatalities, injuries and tonnes of bunker fuel lost at sea

As deficiencies identified during inspections have to be rectified, inspections are expected to lead to a reduction in the number of ship deficiencies over time and thereby to improve safety and environmental performance. To estimate the benefits, a relationship between the number of inspections and safety indicators has been estimated in the context of the impact assessment support study accompanying the revision of the port State control Directive, by establishing an autoregressive log-log model[157]. The effect of an inspection conducted in year t is estimated to have an impact on the safety level in year t+2. The hypothesis is thus that the safety impacts take two years to materialize. The same estimates are used in the context of this assessment, to ensure consistency.

A relationship between the (natural logarithm) of inspections conducted in the period 2012-2017 on the number of marine casualties in the period 2014-2019 has been estimated. It indicates that the negative effect of the number of inspections on the number of marine casualties two years later is statistically different from 0. Furthermore, the error term, indicated by the R2 (at 0.69) is fairly low, which suggests that much of the changes in year t+2 can be explained by changes in year t. The regression analysis is to be interpreted as "a 1% increase in inspections in year t reduces the number of marine casualties in year 2 by 1.031%". However, as the number of ship deficiencies decreases over time, it is expected that the impact on marine casualties and thus on the number of fatalities and injuries avoided would also decrease over time. Therefore, it has been assumed that the elasticity decreases in a non-linear way by 2050, the impacts being significantly smaller post-2040 (at less than 0.2%).

It should be noted however that there is high uncertainty regarding these estimates. This is because the impacts of the FS Directive on safety are indirect. For this reason, sensitivity analysis has been performed, assuming 10% and 15% lower value in absolute terms of the elasticity used to derive the impacts.

The reduction in the number of casualties is subsequently translated into a reduction in the number of fatalities, injuries and tonnes of bunker fuel lost at sea by using the ratios between the number of fatalities, injuries and tonnes of bunker fuel lost at sea and the number of marine casulaties projected in the baseline scenario.

[157] COWI et al. (2023), *Impact assessment support study concerning possible revision of Directive 2009/16/EC on port State Control*

ANNEX 5: EU/EEA FLEET IN NUMBERS

This Annex provides the fleet size of EU Member States, Norway and Iceland and its evolution between 2016 and 2021.

Flag	Number of ships						Share of ships in the world fleet						Share of ships in the EU fleet					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
AT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BE	75	83	88	99	104	98	0.14%	0.15%	0.16%	0.17%	0.18%	0.17%	0.95%	1.04%	1.10%	1.21%	1.28%	1.21%
BG	22	19	23	20	18	17	0.04%	0.03%	0.04%	0.03%	0.03%	0.03%	0.28%	0.24%	0.29%	0.24%	0.22%	0.21%
CZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DK	432	447	470	475	514	530	0.79%	0.81%	0.84%	0.83%	0.89%	0.91%	5.48%	5.61%	5.88%	5.82%	6.31%	6.54%
DE	324	330	290	290	284	271	0.59%	0.60%	0.52%	0.51%	0.49%	0.46%	4.11%	4.14%	3.63%	3.55%	3.48%	3.34%
EE	33	28	26	24	29	29	0.06%	0.05%	0.05%	0.04%	0.05%	0.05%	0.42%	0.35%	0.33%	0.29%	0.36%	0.36%
IE	50	55	61	65	68	63	0.09%	0.10%	0.11%	0.11%	0.12%	0.11%	0.63%	0.69%	0.76%	0.80%	0.83%	0.78%
EL	1,032	1,010	1,011	1,022	972	930	1.88%	1.83%	1.80%	1.78%	1.68%	1.59%	13.08%	12.66%	12.66%	12.51%	11.93%	11.47%
ES	161	162	190	192	215	222	0.29%	0.29%	0.34%	0.33%	0.37%	0.38%	2.04%	2.03%	2.38%	2.35%	2.64%	2.74%
FR	213	210	213	230	232	234	0.39%	0.38%	0.38%	0.40%	0.40%	0.40%	2.70%	2.63%	2.67%	2.82%	2.85%	2.89%
HR	239	241	262	280	292	309	0.44%	0.44%	0.47%	0.49%	0.50%	0.53%	3.03%	3.02%	3.28%	3.43%	3.58%	3.81%
IT	795	777	715	691	676	658	1.45%	1.41%	1.28%	1.21%	1.17%	1.13%	10.08%	9.74%	8.95%	8.46%	8.29%	8.12%
CY	807	808	830	852	853	839	1.47%	1.47%	1.48%	1.49%	1.47%	1.44%	10.23%	10.13%	10.39%	10.43%	10.47%	10.35%
LV	28	30	25	30	32	42	0.05%	0.05%	0.04%	0.05%	0.06%	0.07%	0.35%	0.38%	0.31%	0.37%	0.39%	0.52%
LT	33	37	32	34	37	34	0.06%	0.07%	0.06%	0.06%	0.06%	0.06%	0.42%	0.46%	0.40%	0.42%	0.45%	0.42%
LU	45	38	33	39	43	45	0.08%	0.07%	0.06%	0.07%	0.07%	0.08%	0.57%	0.48%	0.41%	0.48%	0.53%	0.56%
HU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MT	1,999	2,015	1,987	2,046	1,962	1,876	3.64%	3.66%	3.54%	3.57%	3.39%	3.21%	25.34%	25.27%	24.88%	25.05%	24.07%	23.14%
NL	784	773	767	761	754	740	1.43%	1.40%	1.37%	1.33%	1.30%	1.27%	9.94%	9.69%	9.60%	9.32%	9.25%	9.13%
PL	42	41	40	37	36	36	0.08%	0.07%	0.07%	0.06%	0.06%	0.06%	0.53%	0.51%	0.50%	0.45%	0.44%	0.44%
PT	383	482	523	569	619	728	0.70%	0.88%	0.93%	0.99%	1.07%	1.25%	4.86%	6.04%	6.55%	6.97%	7.60%	8.98%
RO	9	9	10	9	9	9	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.11%	0.11%	0.13%	0.11%	0.11%	0.11%
SI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FI	156	152	157	158	151	150	0.28%	0.28%	0.28%	0.28%	0.26%	0.26%	1.98%	1.91%	1.97%	1.93%	1.85%	1.85%

Flag	Number of ships						Share of ships in the world fleet						Share of ships in the EU fleet					
	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021	2016	2017	2018	2019	2020	2021
SE	226	228	234	244	250	248	0.41%	0.41%	0.42%	0.43%	0.43%	0.42%	2.87%	2.86%	2.93%	2.99%	3.07%	3.06%
IS	22	23	22	23	22	22	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%						
NO	952	966	984	1,021	1,084	1,121	1.73%	1.75%	1.76%	1.78%	1.87%	1.92%						
EU totals	**7,888**	**7,975**	**7,987**	**8,167**	**8,150**	**8,108**	**14.38%**	**14.47%**	**14.26%**	**14.25%**	**14.07%**	**13.88%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
EEA totals	**8,862**	**8,964**	**8,993**	**9,211**	**9,256**	**9,251**	**16.15%**	**16.26%**	**16.06%**	**16.07%**	**15.98%**	**15.84%**						

Source: EMSA (MARINFO); Notes: The figures cover seagoing propelled merchant ships, excluding dredgers, mooring vessels, pilot vessels, salvage ships, standby safety vessels, accommodation ships, patrol vessels, ice-breakers, effluent carriers, floating production storage and offloading installations (FPSO), production testing vessels, tank cleaning vessels, offshore construction vessels, fish carriers, firefighting vessels, fishing vessels, fishing patrol vessels, trawlers, barges. '-' stands for not applicable – no register or no convention ship registered.

ANNEX 6: REQUIREMENTS OF THE FLAG STATE DIRECTIVE AND OF THE IMO III-CODE

The Council Decision 2013/268/EU made the III-Code part of the EU legal order. The incorporation is however fragmented. Some sections are already covered in full or in part by EU legislation and others need to be introduced and further detailed, as they leave too much room for interpretation to the individual EU Member States.

Table 37 below provides an overview of how the III-Code is reflected in the EU legislation, while table 38 provides more details on the part 2. To be noted that Parts 3 and 4 of the III-Code are already covered in EU legislation via the VTMIS Directive (Directive 2002/59/EC) and the port State control Directive (Directive 2009/16/EC).

Table 37: III-Code and its reflection in EU legislation

Resolution A.1070(28) (adopted on 4 December 2013) - IMO Instruments Implementation Code (III Code)	**EU legislation**	**Assessment**
PART 1-COMMON AREAS		
Objective	Reflected in the FSD Art 1. The 2013 Council Decision is also pertinent here.	Partly incorporated
Strategy	This is reflected in the EU maritime transport safety policy and included, in part, in the Sustainable and Smart Mobility Strategy. Member States have maritime strategies at national level.	Partly incorporated
General	Reflected in recital (3) and Art 1 in the FSD	Partly incorporated
Scope	Same as in Art 1 (a) and (b), and further in the Accident Investigation Directive and the STCW Directive.	Partly incorporated
Initial actions	This is partly covered by FSD Art 8.1 (Quality Management System).	Partly incorporated
Communication of information	Partly covered in FSD Art 4.2	Partly incorporated
Records	FSD Art 8.1 – Quality Management System	Incorporated
Improvement	FSD Art 8.2 – flag State performance criteria via the Paris MoU White/Grey/Black list publication.	Partly incorporated
	Commission Regulation (EU) No 801/2010 implementing Art. 10(3) of Directive 2009/16/EC on port State control as regards the flag State criteria.	Incorporated
PART 2 - FLAG STATES		
Implementation	Council Decision 2013/268/EC	Partly incorporated
	Implementing Regulation (EU) No 1355/2014	Partly incorporated
	Implementing Directive 2014/111/EU	Partly incorporated
Delegation of authority	Regulation (EC) No 391/2009 on common rules and standards for ship inspection and survey organisations	Incorporated
	Directive 2009/15/EC on common rules and	Incorporated

Resolution A.1070(28) (adopted on 4 December 2013) - IMO Instruments Implementation Code (III Code)	EU legislation	Assessment
	standards for ship inspection and survey organisations and for the relevant activities of maritime administrations	
Enforcement		To be incorporated
Flag State surveyors		To be incorporated
Flag State investigations	Directive 2009/18/EC on accident investigation	Incorporated
Evaluation and review	FSD Art 8.2	Partly incorporated
PART 3-COASTAL STATES		
Implementation	Directive 2002/59/EC on Vessel Traffic Monitoring and information system (VTMIS)	Incorporated
Enforcement	Directive 2002/59/EC on VTMIS	Incorporated
Evaluation and review	High Level Steering Group on governance of the digital maritime system and services (Commission Decision (EU) 2016/566)	Incorporated
PART 4-PORT STATES		
Implementation	Directive 2009/16/EC on port State control	Incorporated
Enforcement	Directive 2009/16/EC on port State control Directive (EU) 2019/883 on port reception facilities for the delivery of waste from ships	Incorporated
Evaluation and review	Directive 2009/16/EC on port State control and in the context of Paris MoU	Incorporated

Table 38: More detailed assessment of III-Code part 2 and its reflection in EU legislation

PART 2 – FLAG STATES	
Implementation	**Assessment**
15 [158]In order to effectively discharge their responsibilities and obligations, flag States should: .1 implement policies through issuing national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which they are parties; and .2 assign responsibilities within their Administrations to update and revise any relevant policies adopted, as necessary.	*FSD Art 1 and Art 2.*
16 A flag State should establish resources and processes capable of administering a safety and environmental protection programme, which, as a minimum, should consist of the following: .1 administrative instructions to implement applicable	*To be aligned and introduced, giving the basis for an EMSA role in providing support.* *.1 partly in Article 4 of FSD and in EU*

[158] Numbering in the III-Code

international rules and regulations as well as developing and disseminating any interpretative national regulations that may be needed [including certificates issued by a classification society, which is recognized by the flag State in accordance with the provisions of SOLAS regulation XI-1/1, and which certificate is required by the flag State to demonstrate compliance with structural, mechanical, electrical, and/or other requirements of an international convention to which the flag State is a party or compliance with a requirement of the flag State's national regulations];	*legislation on ROs.* *NOTE: text in […] has been explicitly excluded from the scope of the legislation on ROs; Commission Implementing Directive 2014/111/EU and Commission Implementing Regulation No 1355/2014.*
.2 compliance with the requirements of the applicable international instruments, using an audit and inspection programme, independent of any administrative bodies issuing the required certificates and relevant documentation and/or of any entity which has been delegated authority by the State to issue the required certificates and relevant documentation;	*.2 Maintain and align with IMSAS (Art 7.2). In part this is also done by the independent visits and inspections programme carried out by EMSA on behalf of the Commission. Can be complemented by the quality management system (QMS) ISO audits and possible 'internal' audits by the MS. Also relates to the audit mechanism for EU ROs.*
.3 compliance with the requirements related to international standards of training, certification and watchkeeping of seafarers. This includes, inter alia: .1 training, assessment of competence and certification of seafarers; .2 certificates and endorsements that accurately reflect the competencies of the seafarers, using the appropriate terminology as well as terms that are identical to those used in any safe manning document issued to the ship; .3 impartial investigation to be held of any reported failure, whether by act or omission that may pose a direct threat to safety of life or property at sea or to the marine environment, by the holders of certificates or endorsements issued by the State; .4 arrangements for the withdrawal, suspension or cancellation of certificates or endorsements issued by the State when warranted and when necessary to prevent fraud; and .5 administrative arrangements, including those involving training, assessment and certification activities conducted under the purview of another State, which are such that the flag State accepts its responsibility for ensuring the competence of masters, officers and other seafarers serving on ships entitled to fly its flag;	*.3 Covered in the Directive (EU) 2019/1159 on training of seafarers (implementing the STCW convention)*
.4 the conduct of investigations into casualties and adequate and timely handling of cases involving ships with identified deficiencies; and	*.4 Covered in the Accident Investigation Directive*
.5 the development, documentation and provision of	*.5 Covered in part by Regulation (EU)*

guidance concerning those requirements found in the relevant international instruments that are to the satisfaction of the Administration.	*No 789/2004 on the transfer of cargo and passenger ships between registers*
Delegation of authority 18 With regard only to ships entitled to fly its flag a flag State authorizing a recognized organization to act on its behalf, in conducting the surveys, inspections and audits, issuing of certificates and documents, marking of ships and other statutory work required under the conventions of the Organization or under its national legislation, should regulate such authorization(s) in accordance with the applicable requirements of the international mandatory instruments to:	*In the EU legislation on ROs.*
[.1 determine that the recognized organization has adequate resources in terms of technical, managerial and research capabilities to accomplish the tasks being assigned, in accordance with the required standards for recognized organizations acting on behalf of the Administration set out in the relevant instruments of the Organization;]	*Text in […] has been explicitly excluded from the scope of the RO legislation Commission Implementing Directive 2014/111/EU*
.2 have as its basis a formal written agreement between the Administration and the recognized organization which, as a minimum, includes the elements set out in the relevant instruments of the Organization, or equivalent legal arrangements, and which may be based on the model agreement for the authorization of recognized organizations acting on behalf of the Administration; .3 issue specific instructions detailing actions to be followed in the event that a ship is found unfit to proceed to sea without danger to the ship or persons on board, or is found to present an unreasonable threat of harm to the marine environment; .4 provide the recognized organization with all appropriate instruments of national law and interpretations thereof giving effect to the provisions of the conventions and specify, only for application to ships entitled to fly its flag, whether any additional standards of the Administration go beyond convention requirements in any respect; and .5 require that the recognized organization maintain records, which will provide the Administration with data to assist in interpretation of requirements contained in the applicable international instruments.	
19 [No flag State should mandate its recognized organizations to apply to ships, other than those entitled to fly its flag, any requirement pertaining to their classification rules, requirements, procedures or performance of other statutory certification processes, beyond convention requirements and the mandatory instruments of the Organization.]	*[text in […] has been explicitly excluded from the scope of the legislation on ROs Commission Implementing Directive 2014/111/EU*

20 The flag State should establish or participate in an oversight programme with adequate resources for monitoring of, and communication with, its recognized organization(s) in order to ensure that its international obligations are fully met, by:	To be introduced and specified. This is a core matter.
.1 exercising its authority to conduct supplementary surveys to ensure that ships entitled to fly its flag effectively comply with the requirements of the applicable international instruments;	*.1 To be introduced and specified. In part covered for RO-PAX ships, Directive (EU) 2017/2110.*
.2 conducting supplementary surveys as it deems necessary to ensure that ships entitled to fly its flag comply with national requirements, which supplement the international mandatory requirements; and	*.2 To be introduced and specified.*
.3 providing staff who have a good knowledge of the rules and regulations of the flag State and those of the recognized organizations and who are available to carry out effective oversight of the recognized organizations.	*.3 To be introduced and specified, to ensure not only adequate resources but also technical training in relation to the size and type of fleet.*
21 A flag State nominating surveyor(s) for the purpose of carrying out surveys, audits and inspections on its behalf should regulate such nominations, as appropriate, in accordance with the guidance provided in paragraph 18, in particular subparagraphs .3 and .4.	*To be introduced and specified whether or not to allow non-exclusive surveyors and if so, for what type of inspections/surveys.*
Enforcement 22 A flag State should take all necessary measures to secure observance of international rules and standards by ships entitled to fly its flag and by entities and persons under its jurisdiction so as to ensure compliance with its international obligations. Such measures should include, inter alia:	*Partly in FSD Art 4 and Art. 5*
.1 prohibiting ships entitled to fly its flag from sailing until such ships can proceed to sea in compliance with the requirements of international rules and standards;	*.1 Art 5 in the current FSD.*
.2 the periodic inspection of ships entitled to fly its flag to verify that the actual condition of the ship and its crew is in conformity with the certificates it carries;	*.2 This is linked to the oversight programme above*
.3 the surveyor to ensure, during the periodic inspection referred to in subparagraph .2, that seafarers assigned to the ships are familiar with: .1 their specific duties; and .2 ship arrangements, installations, equipment and procedures;	*.3-.4 covered by Directive 2013/54/EU Directive (EU) MLC and, 2019/1159 on training of seafarers*
.4 ensuring that the ship's complement, as a whole, can effectively coordinate activities in an emergency	

situation and in the performance of functions vital to safety or to the prevention or mitigation of pollution; .5 providing, in national laws and regulations, for penalties of adequate severity to discourage violation of international rules and standards by ships entitled to fly its flag; .6 instituting proceedings, after an investigation has been conducted, against ships entitled to fly its flag, which have violated international rules and standards, irrespective of where the violation has occurred; .7 providing, in national laws and regulations, for penalties of adequate severity to discourage violations of international rules and standards by individuals issued with certificates or endorsements under its authority; and .8 instituting proceedings, after an investigation has been conducted, against individuals holding certificates or endorsements who have violated international rules and standards, irrespective of where the violation has occurred.	*.5-.8 Covered in the Ship Source Pollution Directive, Directive 2005/35*
23 A flag State should develop and implement a control and monitoring programme, as appropriate, in order to: .1 provide for prompt and thorough casualty investigations, with reporting to the Organization as appropriate; .2 provide for the collection of statistical data, so that trend analyses can be conducted to identify problem areas; and .3 provide for a timely response to deficiencies and alleged pollution incidents reported by port or coastal States.	*.1 Covered in the AID* *.2 To be introduced and specified as part of a modernized FS performance measurement system. EMSA's DONA system in the making as well as EMCIP will be able to produce some statistics.* *3. Covered in FSD Art 5*
24 Furthermore, the flag State should: .1 ensure compliance with the applicable international instruments through national legislation; .2 provide an appropriate number of qualified personnel to implement and enforce the national legislation referred to in subparagraph 15.1, including personnel for performing investigations and surveys; .3 provide a sufficient number of qualified flag State personnel to investigate incidents where ships entitled to fly its flag have been detained by port States;	*.2 To be introduced and specified* *.3 Covered in FSD Art 5*

.4 provide a sufficient number of qualified flag State personnel to investigate incidents where the validity of a certificate or endorsement or of the competence of individuals holding certificates or endorsements issued under its authority are questioned by port States; and	*.4 covered by Directive 2013/54/EU Directive (EU) MLC and, 2019/1159 on training of seafarers*
.5 ensure the training and oversight of the activities of flag State surveyors and investigators.	*.5 To be introduced and specified. EMSA capacity building.*
25 When a flag State is informed that a ship entitled to fly its flag has been detained by a port State, the flag State should oversee that appropriate corrective measures are taken to bring the ship in question into immediate compliance with the applicable international instruments. 26 A flag State, or a recognized organization acting on its behalf, should only issue or endorse an international certificate to a ship after it has determined that the ship meets all applicable requirements. 27 A flag State should only issue an international certificate of competency or endorsement to a person after it has determined that the person meets all applicable requirements.	*25, 26, 27 - Art 5 in FSD*
Flag State surveyors 28 The flag State should define and document the responsibilities, authority and interrelation of all personnel who manage, perform and verify work relating to and affecting safety and pollution prevention.	*Art 8.1 – to be clarified in the QMS*
29 Personnel responsible for, or performing surveys, inspections and audits on ships and companies covered by the relevant international mandatory instruments should have as a minimum the following: .1 appropriate qualifications from a marine or nautical institution and relevant seagoing experience as a certificated ship's officer holding or having held a valid management level certificate of competency and having maintained their technical knowledge of ships and their operation since gaining their certificate of competency; or .2 a degree or equivalent from a tertiary institution within a relevant field of engineering or science recognized by the flag State; or .3 accreditation as a surveyor through a formalized training programme that leads to the same standard of surveyor's experience and competency as that required in paragraphs 29.1, 29.2 and 32. 30 Personnel qualified under paragraph 29.1 should	*29-32 Non-mandatory in the III-code (IMO Resolution A.1070(28))*

have served for a period of not less than three years at sea as an officer in the deck or engine department. 31 Personnel qualified under paragraph 29.2 should have worked in a relevant capacity for at least three years. 32 In addition, such personnel should have appropriate practical and theoretical knowledge of ships, their operation and the provisions of the relevant national and international instruments necessary to perform their duties as flag State surveyors obtained through documented training programmes.	
33 Other personnel assisting in the performance of such work should have education, training and supervision commensurate with the tasks they are authorized to perform.	*33 & 34. To be introduced and specified as part of capacity building and training*
34 Previous relevant experience in the field of expertise is recommended to be considered an advantage; in case of no previous experience, the Administration should provide appropriate field training.	
35 The flag State should implement a documented system for qualification of personnel and continuous updating of their knowledge as appropriate to the tasks they are authorized to undertake.	*35. Art 8.1 – to be clarified in the QMS*
36 Depending on the function(s) to be performed, the qualifications should encompass: .1 knowledge of applicable, international and national, rules and regulations for ships, their companies, their crew, their cargo and their operation; .2 knowledge of the procedures to be applied in survey, certification, control, investigative and oversight functions; .3 understanding of the goals and objectives of the international and national instruments dealing with maritime safety and protection of the marine environment, and of related programmes; .4 understanding of the processes both on board and ashore, internal as well as external; .5 possession of professional competency necessary to perform the given tasks effectively and efficiently; .6 full safety awareness in all circumstances, also for one's own safety; and .7 training or experience in the various tasks to be performed and preferably also in the functions to be assessed.	*36. to be introduced and to be covered and supported by EMSA capacity building and training.*
37 The flag State should issue an identification	*Not necessary for EU FS. May be done*

document for the surveyor to carry when performing his/her tasks.	*at national level depending on national requirements.*
Flag State investigations 38 Marine safety investigations should be conducted by impartial and objective investigators, who are suitably qualified and knowledgeable in matters relating to the casualty. Subject to any agreement on which State or States will be the marine safety investigating State(s), the flag State should provide qualified investigators for this purpose, irrespective of the location of the casualty or incident. 39 The flag State is recommended to ensure that individual investigators have working knowledge and practical experience in those subject areas pertaining to their normal duties. Additionally, in order to assist individual investigators in performing duties outside their normal assignments, the flag State is recommended to ensure ready access to expertise in the following areas, as necessary: .1 navigation and the Collision Regulations; .2 flag State regulations on certificates of competency; .3 causes of marine pollution; .4 interviewing techniques; .5 evidence gathering; and .6 evaluation of the effects of the human element. 40 It is recommended that any accident involving personal injury necessitating absence from duty of three days or more and any deaths resulting from occupational accidents and casualties to ships of the flag State should be investigated, and the results of such investigations made public. 41 Ship casualties should be investigated and reported in accordance with the relevant international instruments, taking into account the Casualty Investigation Code, as may be amended, and guidelines developed by the Organization. The report on the investigation should be forwarded to the Organization together with the flag State's observations, in accordance with the guidelines referred to above.	*Flag State Investigations are covered in the EU through the Accident Investigation Directive.*
Evaluation and review 42 A flag State should, on a periodic basis, evaluate its performance with respect to the implementation of administrative processes, procedures and resources necessary to meet its obligations as required by the international instruments to which it is a party. 43 Measures to evaluate the performance of flag States should include, inter alia, port State control detention rates, flag State inspection results, casualty statistics, communication and information processes, annual loss	*42, 43 and 44 - Partly covered in article 8.2 FSD – To be introduced and specified via comitology: introduce a new performance scheme; link to performance scheme for EU RO's.*

statistics (excluding constructive total losses (CTLs)) and other performance indicators as may be appropriate, in order to determine whether staffing, resources and administrative procedures are adequate to meet its flag State obligations. 44 Areas recommended for regular review may include, inter alia: .1 fleet loss and accident ratios to identify trends over selected time periods; .2 the number of verified cases of detained ships in relation to the size of the fleet; .3 the number of verified cases of incompetence or wrongdoing by individuals holding certificates or endorsements issued under the flag State's authority; .4 responses to port State deficiency reports or interventions; .5 investigations into very serious and serious casualties and lessons learned from them; .6 technical and other resources committed; .7 results of inspections, surveys and controls of the ships in the fleet; .8 investigation of occupational accidents; .9 the number of incidents and violations that occur under the applicable international maritime pollution prevention regulations; and .10 the number of suspensions or withdrawals of certificates, endorsements, approvals, or similar.	

ANNEX 7: LINKS BETWEEN THE EX-POST EVALUATION AND THE IMPACT ASSESSMENT

The links between the 2018 ex-post evaluation[159] and this impact assessment are presented in the table below. This annex also presents the conclusions of the 2018 Maritime Fitness Check[160].

Table 39: Links between the 2018 ex-post evaluation and this impact assessment

Main ex post evaluation conclusions	Impact Assessment
Conclusions on relevance	
The issues identified at the time of the adoption as well as the general and specific objectives of the FSD are still applicable.	The impact assessment further develops the general and specific objectives of the Directive.
Conclusions on effectiveness	
The FSD ensured all Member States undergo the then voluntary IMO audit, but stopped being applicable on 17 June 2017.	The impact assessment maintains the requirement for Member States as flag States to undergo the now mandatory IMO Audit, and the provision of transparency is strengthened.
The impact of the FSD on flag transfers has been minimal because it does not directly target the drivers that inform shipowners to transfer to a different EU MS or third country flag. These drivers are today more related to the quality of service and other factors, than to the aim of avoiding a strictly applied safety regime.	The current FSD does not specify the technical protocol standard to be used. This does not meet modern (service and technological) digitalisation demands given IT solutions available, enabling e-Certificates/e-certification Registers /e-FS inspection report. The impact assessment explores the digitalisation dimension in order to improve information sharing, efficiency and thereby the attractiveness of EU MS flags.
Since the adoption of the FSD a speeding up of the number of ratifications of international conventions has been observed, in line with the main objectives of the FSD: to enhance safety and prevent pollution from ships flying the flag of a Member State.	The impact assessment explores aligning to the changes in the IMO rules and regulations via the FS relevant parts of the III-Code.
In relation to measurement of flag State performance, EU Member States performance had slightly deteriorated in terms of Paris MoU port State control detentions, both in absolute and relative terms. This has led to an increase in grey listings from one Member State in 2011 to three in 2015.	The current practice of measuring flag State performance mostly relates to non-compliance post events, rather than being pro-active and based on risk-assessment/profiling. The impact assessment further develops the performance measurement (the *paradigm shift)* from measuring "fleet" only to also measure performance of "administration".
Flag State administrations experience resource constraints in terms of staff and financial means. Whether this has an impact on the monitoring of the work on flagged ships by Recognised Organisations on behalf of the flag State could not be conclusively stated due to the limited availability of data. This would be a reasonable assumption given that the responsibility as a FS cannot be delegated away.	The impact assessment explores measures to ensure proper and purposeful monitoring of Recognised Organisation by Member States maritime administrations.
Conclusions on efficiency	
The FSD is perceived as relatively simple and not imposing a substantial administrative burden on maritime administrations. No conclusions could be drawn however on the efficient use of Member States' budgets.	The impact assessment explores the synergies/cost-saving solutions using digitalisation, which could be provided at EU-level.
Conclusions on coherence	

[159] SWD (2018) 232 final
[160] SWD (2018) 228 final

Main ex post evaluation conclusions	Impact Assessment
The FSD is no longer fully in line with the IMO III-Code	The impact assessment identifies the need for full alignment to IMO III-Code to avoid the current fragmented implementation and to thereby provide legal certainly as regards new regulatory developments.
Conclusions on EU added Value	
The FSD brings consistency between the approaches used by all EU Member States, by limiting the high degree of discretion that national maritime authorities may apply when implementing IMO conventions.	EU action continues to be needed in order to ensure continued uniformity and enforcement, contributing to a higher level of maritime safety and maritime transport efficiency as well as guaranteeing a level playing field between Member States.

The 2018 Maritime Fitness Check drew the following conclusions:

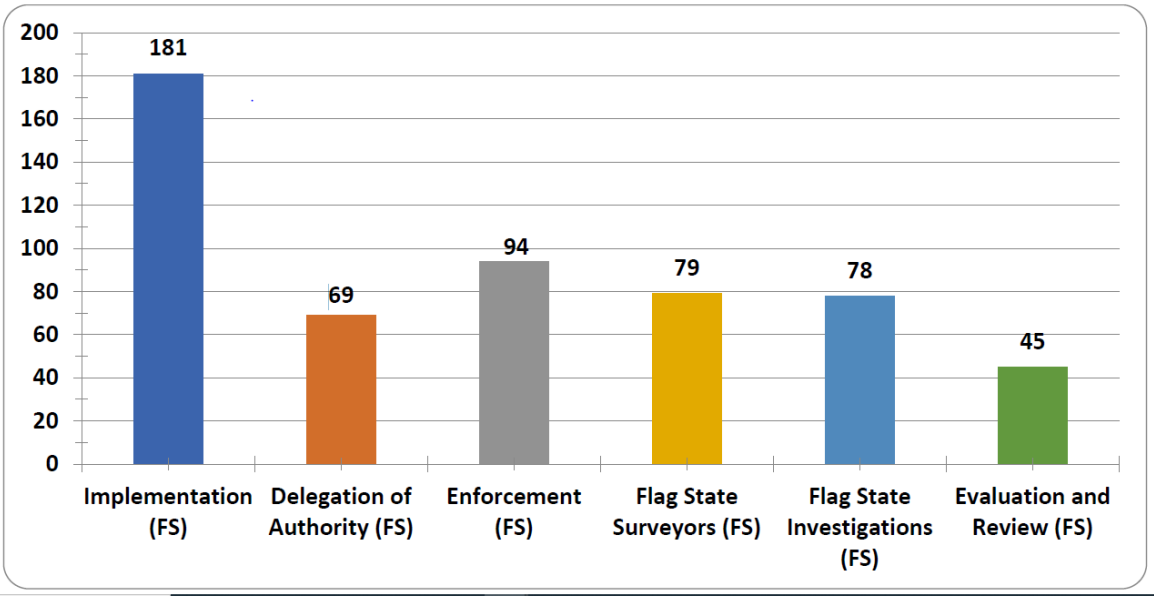
- The EU layer of legislation appears fully relevant to ensure enforcement and uniformity. While the EU is sometimes accused of going beyond the IMO standards and undermining the credibility of the international regulation process when in the past the EU has acted this has prompted progress at IMO level and the subsequent adoption of global initiatives.
- The EU is today widely perceived as one of the regions in the world where rules are most strictly and properly monitored and enforced with effective systems and procedures in place. Considerable added value is associated with EMSA. The Agency's systems and databases, its training and capacity-building activities have been a key enabler of the success of the overall maritime transport policy, ensuring real operational application.
- The capacity of Member States to fulfil their international obligations as a flag, port or coastal State in relation to the various Directives appears to be under strain.
- The fitness check concluded that there is no major scope for legislative simplification in the overall set up. The legislation was complementary and no overlap was identified. The legislation mirrors the various responsibilities defined at international level which would have to be followed in any case by the Member States at national level. On the other hand, the fitness check concluded that there is margin to achieve further simplification and burden reduction in relation to the individual Directives. The potential as well as the challenges of digitalisation are horizontal issues. Digitalisation through EMSA systems has been a key enabler for the achievement of the objectives.

ANNEX 8: CONCLUSIONS OF AUDITS CONDUCTED UNDER THE IMO MEMBER STATE AUDIT SCHEME

According to the IMO III-Code part 2, flag States' responsibilities are classified in six groups, namely – implementation, delegation of authority, enforcement, flag State surveyors, flag State investigations and evaluation and review.

The figure below depicts the distribution of 546 findings according to these six groups, following from audits conducted under both the voluntary (VIMSAS 2007 until 2016) and mandatory IMO Member State Audit Scheme (IMSAS 2017 -)[161].

Figure 16: Number of findings and observations under part 2 of the III Code – Flag States



Source: submission III7/7 and III7/INF 27

Most recurrent findings correspond to implementation (181 findings, 33.1%), followed by enforcement (94 findings, 17.2%), flag State surveyors (79 findings, 14.5%), flag State investigations (78 findings, 14.3%), delegation of authority (69 findings, 12.6%), and evaluation and review (45 findings, 8.2%).

In the area of implementation, the main findings are related to the lack of implementation of policies through issuing national legislation and guidelines and the assignment of responsibilities to update and revise any relevant policy adopted, as well as documentation and provision of guidance concerning those mandatory requirements, that are left to the satisfaction of the Administration and type approval processes. Furthermore, there are some findings related to resources to ensure compliance with the requirements of the mandatory IMO instruments.

In the area of enforcement, the main findings are related to the absence of appropriate national legal provisions, internal directives, and human resources to ensure effective enforcement and compliance with international obligations.

[161] Sub-Committee on Implementation of IMO Instruments (III) - 5th, 6th and 7th sessions

Concerning flag State surveyors, recurrent findings refer to training programmes, qualification, authority, and interrelation among surveyors, as well as a documented system for the qualification of personnel and continuous updating of their knowledge.

With respect to the delegation of authority, most recurrent findings are related to the Administration's oversight programme of recognized organizations (ROs), agreement between the Administration and the RO, as well as compliance with other relevant provisions of both the RO Code and the III-Code.

With respect to evaluation and review, most recurrent findings are related to the absence of a system to evaluate, on a periodic basis, the performance of the State in the conduct of flag State activities, regarding the implementation of administrative processes, procedures, and resources necessary to meet its obligations as required by mandatory IMO instruments to which the State is a Party.

This is correlated with some findings and actions taken by some Member States following root-cause analysis as required by the FSD (Article 8.2). As an example, for one MS that was on the grey list of the Paris MoU for two consecutive years – the IMO audit findings indicated the following:

The main reasons for the lack of compliance that led to the detentions and the deficiencies resulting in the grey list status identified included: 1. insufficient functioning of the system of supervision over the ships' owner and safety management system; 2. insufficient functioning of the system of flag State oversight over ships and ships' owners (both procedures and staff qualifications need to be improved); 3. insufficient RO performance during surveys and inspections; 4. need for improvement in the field of cooperation and communication between flag State administration and ROs; 5. insufficient effectiveness of the electronic database of flagged vessels, which needs to be upgraded with new functionalities, especially in the field of communication and data exchange with RO.

ANNEX 9: EXPLANATION ON THE TYPE OF SHIP REGISTRIES

UNCLOS (The United Nations Convention on the Law of the Sea) requires that ships sail under the flag of one State only (normally indicated by the home port under the name of the ship). Ship registration is the process by which a ship is documented and given the nationality of the country in which the ship has been registered and therefore fly that nation's flag at the stern. The flag sets the jurisdiction on-board that vessel, which is normally that of the national (or first) register. Flag States can establish so called second ship registers, which can be divided into 'territorial registers' – including overseas territories or autonomous islands like Madeira – or international registers for international carriage vessels[162]. Each register has its own rules as to the types of vessels that it will accept for registration. Traditionally, in the literature the registries are classified in two forms - "national" and "open":

- *National Register*: a register that is open only to ships of its own nationality is known as a traditional or national register. In other words, they allow only vessels that are owned by companies or persons that are residents of that country. Traditionally, closed registries have a two-fold requirement: firstly, incorporation in country of registration and secondly, principal place of business in country of registration. In the EU, Italy and Greece are flag states with National Registers.

- *Open Register*: a register allowing ships to be registered under a flag and fly the country's flag without the real owner having a strong connection with the country. An Open Register allows shipowners to register their ships even though they may have a different nationality to the countries of registration. In the EU, Malta and Cyprus are flag states with Open Registers.

Along these two forms, other type of registries also exist, namely:

- *Second Register:* flag States with a primary national register, may offer an alternative registration with different crewing, regulatory, or tax requirements associated with it. The motivation[163] behind the creation of the second registers was to stem the flow of ships moving from the national register to flags that had more flexible, and therefore less costly, crewing and fiscal arrangements. For instance, France and Norway structured their secondary registers to allow a greater percentage of seafarers to be foreign citizens than was permitted on their respective national registers. France (*French Austral and Antarctic Territories*), Portugal (*International Ship Register of Madeira*), Spain (*the Canary Islands Special Register of Ships*) and the Netherlands (*Netherlands Antilles Register*) are examples of territorial Secondary Registers. There are various types of second registers and some offer attractive combinations of national and open registry features. These are easier to access and have fewer entry requirements than most national registers, but they tend to maintain a nationality link between beneficial owner or management of the vessel and the flag State[164]. Some allow foreign shipowners access to the register only once certain technical and safety

[162] EPRS | European Parliamentary Research Service (2015) Ex-Post Impact Assessment on the Implementation and Effects of the Third Maritime Safety Package

[163] Jessica S. Bemfeld (2007), "States, Ships, and Secondary Registers: Examining Sovereignty and Standards in a Globalized World". Available at: https://orca.cardiff.ac.uk/55744/1/U584266.pdf

[164] Jessica S. Bemfeld (2007), "States, Ships, and Secondary Registers: Examining Sovereignty and Standards in a Globalized World". Available at: https://orca.cardiff.ac.uk/55744/1/U584266.pdf

standards are met[165] e.g. Denmark (*the Danish International Ship Registers*) and Germany (*the German International Shipping Register*).

Second and Open registers do not necessarily have lower safety standards than the national (or first) registers, but they do leave a margin when it comes to taxation and nationality of manning, as ships registered there are normally not involved in trade to/from its own ports (domestic trade). Many second registers are maintained for use only by national shipowners as an alternative to flagging out and as a way to compete with the open register system.

[165] Jessica S. Bemfeld (2007), "States, Ships, and Secondary Registers: Examining Sovereignty and Standards in a Globalized World". Available at: https://orca.cardiff.ac.uk/55744/1/U584266.pdf

ANNEX 10: FLAG STATE DELEGATION TO RECOGNISED ORGANISATIONS

The table below presents the functions delegated by Member States to Recognised Organisations, according to the IMO Global Integrated Shipping Information.

		Member States																										
Performance items		*AT*	*BE*	*BG*	*HR*	*CY*	*CZ*	*DK*	*EE*	*FI*	*FR*	*DE*	*EL*	*HU*	*IE*	*IT*	*LV*	*LT*	*LU*	*MT*	*NL*	*PL*	*PT*	*RO*	*SK*	*SI*	*ES*	*SE*
Status of delegation	Passenger ship safety	Survey																										
		Cert																										
	Cargo ship safety construction	Survey																										
		Cert																										
	Cargo ship safety equipment	Survey																										
		Cert																										
	Radio	Survey																										
		Cert																										
	ISM Code	Survey																										
		Cert																										
	ISM Code - DOC	Survey																										
		Cert																										
	ISM Code - SMC	Survey																										
		Cert																										
	Load line	Survey																										
		Cert																										
	MARPOL Annex I	Survey																										
		Cert																										
	MARPOL Annex II	Survey																										
		Cert																										
	MARPOL Annex III	Survey																										
		Cert																										
	MARPOL Annex IV	Survey																										
		Cert																										
	MARPOL Annex V	Survey																										
		Cert																										
	MARPOL Annex VI	Survey																										
		Cert																										
	Tonnage measurement	Survey																										
		Cert																										
	AFS Convention	Survey																										
		Cert																										
	BWM Convention	Survey																										
		Cert																										

Yes
The function is fully delegated to the RO

Partial/Limited
Shared responsibility between the RO and MS or RO is authorised but only during predefined periods of time and upon approval of the maritime administration.

No
The function is not delegated to the RO

Empty
Left blank in GISIS

Note: 'Cert' stands for certification.

ANNEX 11: NUMBER OF EXCLUSIVE FS INSPECTORS AND FS INSPECTIONS BY MEMBER STATE

This annex provides the number of exclusive flag State inspectors and the number of flag State inspections, together with the number of ships, per Member State. The data was gathered through direct requests to flag States administrations, questionnaires and interviews.

Table 40: Number of exclusive flag State inspectors, inspections and number of ships in 2021

Member State	Number of ships	Number of inspections	Number of exclusive inspectors
AT			
BE	98	22	8
BG	17	9	9
CZ			
DK	530	127	38
DE	271	2	27
EE	29	0	0
IE	63	36	25
EL	930	162	16
ES	222	88	265
FR	234	47	155
HR	309	16	17
IT	658	37	20
CY	839	214	39
LV	42	14	11
LT	34	48	4
LU	45	50	0
HU			
MT	1876	896	22
NL	740	90	27
PL	36	39	22
PT	728	1	23
RO	9	0	16
SI			
SK			
FI	150	8	24
SE	248	50	21
Total	**8,108**	**1,956**	**789**

Source: VVA, WMU and Admaris (2023), Impact assessment support study; Note: For DE the average number of FS inspections for 2014-2020 is reported.

ANNEX 12: DISCARDED POLICY MEASURES AND OPTIONS

This Annex presents the discarded policy measures and options and the reasons for discarding them.

A) Discarded policy measures

Policy measure	Short description	Reason for discarding
Aligning the requirement of high competence standards of seafarers under the STCW	The Standards for Training Certification and Watchkeeping Convention (STCW) establishes basic requirements for seafarers on an international level, which signatory countries are obliged to meet or exceed. Training under this Convention is different from the training referred to for carrying out flag State inspections.	While training of seafarers is covered under obligations incumbent on a flag State in the III-Code, the EU has made this more specific already via a separate legal act (Directive (EU) 2019/1159 on the minimum level of training of seafarers), as a key feature of the EU maritime safety policy. It incorporates into EU law minimum standards of training, certification and watchkeeping for seafarers serving on board EU vessels which are fixed by the STCW Convention adopted by IMO in 1978. Introducing an alignment in the FSD would not yield any added value or additional results.
Clarifying the definition of seafarer	This definition stems from the STCW Convention.	Such a clarification would have to be done in Directive 2008/106/EC, based on a change in the STCW Convention, once agreed. This is also not covered in the III-Code. Introducing an alignment in the FSD would not yield any added value or additional results; instead it could cause confusion/legal conflict.
Clarifying flag State responsibilities relating to social matters (MLC 2006)	The Maritime Labour Convention adopted by ILO relates to important social rights for seafarers. It is not one of the Conventions adopted by IMO and does not fall under the III-Code or IMO Audit.	Given its importance MLC was reflected into EU law through a separate legal act - Directive 2013/54/EU concerning certain flag State responsibilities for compliance with and enforcement of the Maritime Labour Convention. Introducing clarifications in the FSD will not yield any added value or additional results.
Introducing indicators focusing on the labour supplying aspects	This policy measure was considered in the context of introducing a more refined scheme for measuring the performance of flag States.	For the same reason as above regarding MLC - not covered by the III-Code - it was recognised that designing a purposeful such criteria based on publicly available objective data will be very difficult.
Cross referencing the FSD with Regulation No 789/2004 on transfer of ships between registers	Regulation No 789/2004 has as objective the establishment and functioning of the internal market and involves the elimination of technical barriers to the transfer of cargo and passenger ships between the registers of Member States. While respecting maritime safety, its objective and application are different addressing cargo and	In the consultations, this measure did not receive support from a majority of maritime administrations. They did not see any issue in keeping the FSD and Regulation No 789/2004 without cross references. Furthermore the latter has a more limited scope (cargo and passenger ships only). No benefits of an additional EU measure in this regard were identified either.

	passengers ships as 'goods' in free circulation on the internal market. The Regulation requirements may indirectly benefit from the digitalisation measure in the FSD as regards sharing of ship related information digitally.	
Further clarifying applicability of Quality Management System to all registers under a flag	It was misinterpreted in one case but corrected. The scope is clear and the QMS covers all operational parts of the flag related activities of its administration under that flag, irrespective of if the flag has a 1st, 2nd or other type of register. This is the same in scope as the IMO audit also covers 1st and 2nd Registers.	This is a matter of implementation and starting infringement procedures by the Commission, should such a situation be identified. It has so far not led to any infringement on those specific grounds; the only infringement case related to a MS not having any certified QMS at all. No benefit of an additional EU measure in this regard was identified.
Introduce guidance on remote survey, online approval of measures, equivalents and exemptions	This measure was looked into at the height of the COVID-19 pandemic when lockdowns affected the ability of flags or port States to do physical inspections of ships. Today the situation has normalised again.	The measure will be covered indirectly through the digitalisation measures foreseen for the FSD. The IMO is also looking at developing some guidance on remote surveys and MS are keen on first pursuing such developments internationally, together with all EU MS, via Union submissions to IMO. No benefits of an additional more specific EU measure in this regard were identified. What may be agreed at IMO level will be directed to States in their capacity as flag (and possibly port) States
Introducing environmental indicators for the risk profile of ships	This policy measure was initially contemplated for flag State inspections, and while nothing is preventing any such inspection to have such a focus, in the discussions with MS it has become clear that such a measure fits better in the port State control revision (where the safety risk profile already exists).	This policy measure did not receive much support in the consultations and it was generally considered better suited for the revision of the PSC Directive where this will be included. Environmental risk refers not only to decarbonisation, but is an all embracing concept and in particular related to dangerous and polluting goods (e.g. Heavy Fuel Oil) that can cause pollution in water. As such this is already covered in flag State inspections as well as statutory surveys (MARPOL related rules). Introducing it in legal terms in the FSD would not provide any EU added value.
Introducing a reference in the Directive to the policy objectives of the European Green Deal	This policy measure was included to reflect the key priorities of the Commission. While there is no specific mention to decarbonisation, the Directive already covers pollution prevention from ships. This is done via MS as flag States having to respect MARPOL which covers all types of pollution in water MARPOL Annex I-V) and in the air (MARPOL Annex VI).	In the consultations this measure did not get much support on the grounds that it was not clear what it would add in relation to what is already covered. The European Green Deal covers prevention of all types of pollution, including pollution into water, even if decarbonisation is the most urgent. Should new or stronger rules regarding de-carbonisation at the international level (e.g. MARPOL convention) get agreed and enter into force, these will fall on the flag States to implement

		and ensure in the same way as the current pollution prevention rules[166].
Introduce mandatory minimum education requirements for FS inspectors	This measure aimed to make these non-mandatory elements in the III-Code mandatory for EU MS.	This measure was included with a view to make the part of the III-Code (part 2 paragraphs 29-32) which is non-mandatory, mandatory for EU MS. Such a measure would fall under a different legal basis of the Treaty and where MS have stronger powers and competence. Furthermore, it is a fact that the set-up and structure of a maritime administration varies a lot between the EU MS. In particular for those that are part of the Coast Guard structure and/or the Navy, such requirements are different and the training to get qualifications different (without in any way being inferior). Such a mandatory requirements would have a likely high impact on some MS. As the objective of such a measure is to try to come to a better and more harmonised understanding of how flag State inspections could be carried out, the qualification to become inspector is best left to the national system and level (respecting Article 166 of the Treaty). There would otherwise be a risk to introduce a change that would not necessarily lead to any improved safety inspections or even be counterproductive in attracting technical staff to become flag State inspectors. This measure was also not favoured in the consultations.
Stipulate uniform technical standards for establishing e-registers at national level (Full technical harmonisation)	This measure would define and stipulate exact technical requirements for setting up e-registers at national level.	The objective with such a policy measure would be to ensure that all such e-registers can communicate and thereby achieve an EU-wide harmonisation enabling exchange of relevant information e.g. e-certificates. In the assessment of this measure it became clear that there is an inherent risk in how defining such a 'standard' which may be outdated already at the time the revised Directive would enter into force, given the rapid technological developments. In the consultations with both MS and industry it was also pointed out that such a measure would not be technically neutral and may actually stifle innovative solutions. As the objective is to have interoperability that ensures sharing of information in a flexible way, this measure was not considered the best way to achieve the objective and therefore discarded.
Require MS to do all first Statutory surveys	This measure would strengthen the current requirement (Article 4) where a ship wants to change flag	While it is not too long ago that this was the standard practice among most EU flag administrations, the past 15 years have seen an increasing use of RO's to

[166] It was noted that nothing in this initiative prevents FS responsibilities generally in relation to e.g. the Zero pollution action plan or in relation to relevant aspects stemming from the European Green Deal such as the FuelEUMaritime initiative on the use of renewable and low carbon fuels as well as potential links with other EU environmental legislation.

and issue first certificates (using own technical staff and not RO's)	and would require that such first statutory surveys should be done by exclusive staff of the flag administration.	perform such statutory work and issue the related statutory certificates on behalf of the flag States. Today almost all EU MS use RO's to a very large extent. This measure would require the MS to actually have the staff with the technical capability to do all such statutory surveys and to keep that knowledge constantly updated. The objective was to ensure resources within the flag States both for survey and inspection as well as for RO monitoring. However, it has been pointed out both by MS and industry that even if such resources (posts) would be made available there is no guarantee that a flag State would be able to attract and finally employ such staff. That in turn could then be counterproductive and either the work would end up not being performed to the same quality level as by a RO today or not being performed at all. In both cases no improvement in safety of the flagged fleet is expected.

B) Discarded Policy Options

Repeal of the flag State Directive: As explained in section 1, the 2018 Maritime Fitness Check showed the added value of incorporating international rules in the EU legal order, making them enforceable. During stakeholders' consultations, no Member State opposed the incorporation of the III-Code or the IMO audit into EU law, confirming the Maritime Fitness Check outcome and recommendations, and there were no requirements to repeal the Directive.

Turn all the flag State relevant requirements of the III-Code into articles in the Directive: This is one possible legislative technique, however it is very cumbersome and places an extra burden on the Member States in terms of implementation, i.e. the opposite to simplification and improvement in regulatory efficiency. Moreover, as the III-Code is already mandatory, the wording in a revised Directive would need to be exactly the same. Consequently, there is a risk of creating further legal uncertainty and confusion in case of future updates of the III-Code.

Instead, reproducing the relevant flag State parts of the III-Code in an Annex to the Directive allows a certain flexibility when such changes occur. This is a legal technique used for many[167] if not most of the legal acts incorporating IMO rules under the EU legal order.

Turn the Directive into a Regulation (including turning all the flag State relevant requirements of the III-Code into articles): While this may solve the burden on Member States as regards transposing/implementing a Directive, it is to be recalled that the FSD is only relevant for the Member States as flag States that have ships flying their flag. The flag sets the jurisdiction on board and vest those powers in

[167] Directive (EU) 2022/993 on the minimum level of training of seafarers, incorporating the IMO STCW convention; Regulation (EC) No 336/2006 on the implementation of the International Safety Management Code; Regulation (EC) No 725/2004 on enhancing ship and port facility security, incorporating the International Ship and Port Facility Security Code (ISPS Code); Directive 2001/96/EC establishing harmonised requirements and procedures for the safe loading and unloading of bulk Carriers, incorporating the IMO Code of Practice for the Safe Loading and Unloading of Bulk Carriers (BLUCode).

the master of the ship. It is for these reasons more appropriate to leave to the Member States "the choice of form and methods" for reaching the objectives of the Directive, or in other words, to leave them room for adapting/embedding the Union acquis into the respective national context, given that there is no homogeneity between Member States and their flagged fleets in terms of type, size and operations and a wide variety as to their administrative set up as flag administrations.

Merge Directive 2013/54/EU[168] on enforcement of the Maritime Labour Convention (MLC) as well as Regulation (EC) No 789/2004[169] on transfers of ships between registers, into the FSD: This has been identified in the Maritime Fitness Check as a possibility to explore - all relevant rules would be consolidated into one piece of legislation. The approach would be not to change anything in the legal text, but simply insert the articles of the Regulation and the Directive into the FSD. In the stakeholders' consultations carried out, none of these two possible mergers were favoured. Additionally, the current focus of the revision of the FSD is to incorporate the III-Code and audit. This relates to international conventions adopted by IMO to which the EU Member States as flag States are contracting parties. The IMO audit then looks if the IMO conventions concerned are duly respected. ILO conventions, like the MLC are not among IMO conventions and not under the scope of IMO audit. This is also one of the main reasons for having in the EU legal framework a stand-alone Directive[170]. Another main reason why the approach to merge Regulation (EC) No 789/2004 with the FSD was discarded is that the purpose of that Regulation is to avoid technical barriers to trade on the internal market – free movement of a ship as a 'good'. And while it has to respect safety r ules, a Member State cannot refuse registration on grounds that the incoming ship is not meeting national requirements or certain other requirements imposed on top of international requirements, by national law.

[168] Directive 2013/54/EU of the European Parliament and of the Council of 20 November 2013 concerning certain flag State responsibilities for compliance with and enforcement of the Maritime Labour Convention, OJ L 329, 10.12.2013, p. 1–4

[169] Regulation (EC) No 789/2004 of the European Parliament and of the Council of 21 April 2004 on the transfer of cargo and passenger ships between registers within the Community and repealing Council Regulation (EEC) No 613/91, OJ L 138, 30.4.2004, p. 19–23

[170] [Recital 10] Although Directive 2009/21/EC of the European Parliament and of the Council governs flag State responsibilities, incorporating the voluntary IMO Member States audit scheme into Union law, and introducing the certification of quality of national maritime authorities, a separate Directive covering the maritime labour standards would be more appropriate and would more clearly reflect the different purposes and procedures, without affecting Directive 2009/21/EC

ANNEX 13: RETAINED POLICY MEASURES

This annex provides a more detailed description of the retained policy measures and their links to the specific objectives.

Policy measure	Short description	Link to a specific objective
Policy measures common across options		
PM1: Incorporate the relevant flag State parts of the III-Code and maintain IMO Audit mandatory	This measure provides for full incorporation and alignment with the more recent flag State relevant parts of the III-Code, already mandatory for MS, and maintains and aligns the requirement for MS to undergo the IMO Audit, making them both enforceable under the Directive. It would reflect the relevant IMO Resolution in its most up to date version into Union law and make it enforceable, by fully reflecting all the relevant parts (1 and 2) of the III-Code in an annex of the Directive, with some adaptions for aspects that are already covered by EU-law specifically. This measure will in practice not change the current situation for Member States. It will however ensure full alignment and a consolidated incorporation of the international rules, and avoid the current fragmented implementation. This provides legal certainty and more harmonised implementation across the EU. The measure would be supported by PM2, by allowing EMSA to start a visits programme, checking implementation in MS on behalf of the Commission. Through the possibility to enforce the relevant flag State rules of the III-Code at EU level the possibilities to exercise influence resulting in particular in a better control of the fleet and ROs would increase, which should mean enhanced safety level and control.	SO1: Align the Flag State Directive with new international rules
PM2: Nominate European Commission/EMSA as observes at IMO Audits	This measure entails the requirement for the European Commission and/or EMSA to be included by the Member State as flag State audited, as observers during IMO Audits. This would enhance the synergies between the EMSA visits and inspection programme and the IMO Audits. It will ensure a certain level of transparency and peer control on the one hand, and, on the other hand, provide enhanced support to Member States by way of exchanging experience between them in preparation of undergoing future IMO Audits, with support from EMSA.	SO1: Align the Flag State Directive with new international rules

Policy measure	Short description	Link to a specific objective
	That may improve the overall quality of all EU MS flags and capacity to control their fleet. PM2 will in practice not change the situation for Member States or impose any additional burden, since such assistance from EMSA has already taken place for a number of Member States, on their initiative. It will only require planning to ensure that such visits are back-to-back with the IMO Audits, bearing in mind that about 3 MS will undergo the IMO Audit per year in a 7 year cycle.	
PM3: Establish a flag State expert group to promote cooperation between the Member States and the European Commission	This measure foresees improved cooperation between the Commission and Member States through the creation of a dedicated flag State expert group (in a similar way as the already existing ones for discussing port and coastal State issues). It would draw together flag State experts and inspectors, with EMSA and Commission experts, to discuss a range of issues, such as: • common approach to FS inspections; procedures and guidelines for the control of ships; • common reporting format for FS inspections/RO monitoring; • technical development of the performance criteria related to PM4 as well as the technical method for use in PM10 • how to use the information related to PM4, PM5 and PM6 for preparation of FS inspections/RO monitoring; • the mechanics of the EU RO oversight and monitoring scheme foreseen in PM7; • comparing findings and propose follow-up action; • maximise use/pooling of resources for ROs monitoring e.g. by focus areas. This measure would contain an element of 'peer review' allowing a gradual development of a common understanding and approach to operational issues.	SO2: Ensure adequate inspections and monitoring/oversight SO4: Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties
PM4: Modernise the way Flag State performance is measured	This measure builds on the exploratory work already undertaken for a refinement of the current scheme (Art 8.2) for measuring flag State performance. It will be done via a delegated act (comitology) which will define a set of key performance indicators. Considering the changes brought by the Paris MoU to the method used to calculate	SO4: Ensure a harmonised approach in the understanding, reporting and measuring performance of flag

Policy measure	Short description	Link to a specific objective
	the White-Grey-Black list (WGB) which will be included in the revised PSC Directive, as well as the ongoing work for measuring performance of ROs, this cannot be specified in the FSD at this moment. The Paris MoU list ranks flag States in accordance with the PSC performance of the vessels flying their flag. The method previously used was shown to be unfair to fleets with small numbers of ships, which was recognised and the Paris MoU adopted a more deterministic formula. Hence the current single criterion for measuring flag State performance based on PSC detention records is outdated. PM4 will therefore consider a more refined way to measure flag State performance with the aim to also support the flag State administrations in identifying any weaknesses and therefore lead to continuous improvement. This would be done in full consultation with MS and industry, via comitology.	State fleets and duties
PM5: Introduce a technical solution for use by the Member States requiring: (i) e-certificate registry, reporting of (ii) e-certificates, (iii) e-FS inspection reports, enabling exchange and sharing of information between the Member States and with EU-wide systems (hosted in EMSA)	With regard to digitalisation, this measure is in essence mirroring what is the case for PSC reporting but on the side of flag States. This measure would require the development (building on the existing technical work in EMSA) and operational use of an interoperable technical solution to connect the existing systems of the Member States to: (i) have digitalised e-certificate registers (but leave it to MS to decide how, as long as they are interoperable with central systems, hosted in EMSA); (ii) use and share e-certificates; (iii) report Flag State inspections in e-format. This measure will affect MS that do not allow ROs to issue e-certificates on their behalf. All information must be exchanged between MS and with EU-wide systems hosted in EMSA, as an enabler for efficient capacity building (PM8) and performance measurements (PM4) as well as for an efficient monitoring and oversight scheme (PM7). PM5 and PM6 will ensure consistency between the FSD and the PSC Directive as regards the use and acceptance of e-certificates. As such they will support more efficient handling and inspection of ships by both flag States and	SO3: Ensure higher uptake of digital solutions SO4: Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties

Policy measure	Short description	Link to a specific objective
	port States in the EU and enhance efficiency for the industry (ship owners).	
PM6: Develop a mechanism and template for reporting information and statistics	This measure codifies an already ongoing development, requested by MS and undertaken by EMSA, for collecting on a regular and transparent basis and in a harmonised format statistics and data on the MS administrations and flagged fleet.	SO3 and SO4
PM7: Specify EU Oversight programme of flagged fleet and RO's	As concerns harmonised inspection/monitoring, this measure further specifies and requires what MS should do in terms of supplementary inspection of their vessels and in monitoring Recognised Organisations (ROs) working on their behalf, both individually and as part of an EU oversight programme. These requirements are already included in the III-Code and mandatory but they are not precise enough and leave too much room of interpretation for MS, thus not ensuring a harmonised approach for supplementary inspections and monitoring. This is the key operational aspect of a flag State in monitoring and maintaining control of the ships under its flag and responsibility. Demands to the flag State for issuing or maintaining certificates is the tool for enforcement that shipowners/operators continue to adhere to under the international (and possible national) rules. Two elements will be specified to harmonise the way in which such required oversight should be done in an EU-oversight programme: (1) Flag State inspections (supplementary i.e. not those leading to statutory certification) for verification that the ship continues to meet the requirements for the certificates as issued by or on behalf of the flag States and; (2) oversight of the statutory survey work performed by the RO on behalf of the flag States on its flagged ships. MS would be required to participate in an EU-oversight programme based on technical specifications developed by the expert group set up in PM3 and supported by EMSA. This will on the one hand, have an impact on MS as there would be a possible need for additional resources, especially for MS with a large fleet. On the other hand such an oversight programme would allow MS to share findings. It would allow better planning of flag State	SO2: Ensure adequate inspections and monitoring/oversight SO4: Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties

Policy measure	Short description	Link to a specific objective
	inspections and monitoring of ROs, avoiding duplication of such activities among MS and being more focussed. This would benefit enforcement and lead to transparency. The oversight programme would be linked with the EMSA quality inspections of RO's performed on behalf of the Commission as well as the Commission's assessment thereof and PSC reports, with a view to create synergies for all MS and possibilities for pooling of expertise for improved control and enforcement of safety of the EU MS flagged fleet, which can eventually increase its attractiveness.	
PM8: Introduce common capacity building and harmonised training (post-qualification) for Flag State inspectors / surveyors / auditors	This measure introduces a common harmonised training (post-qualification) for flag State inspectors/surveyors/auditors, without specifying any national educational requirements leading to qualification. The measure can build on the experience with the port State control and include continuous updating and refreshing of knowledge of inspectors (as international rules evolve and new elements e.g. in the field of environmental protection will be introduced and become applicable e.g. via MARPOL). Training and capacity building are fundamental elements for ensuring the right technical expertise. The aim would be a common core curricula agreed with MS as that would ensure a higher level of harmonisation. Such capacity building and harmonised training will be provided by EMSA.	SO2: Ensure adequate inspections and monitoring/oversight SO4: Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties
Policy measures different across options		
PM9a: Define flag State inspector to prevent the use of non-exclusive technical staff	This measure consists in a requirement clarifying that only exclusive technical staff directly employed by the administration can be used for flag State inspections and ROs monitoring (like it is the case if a flag State does statutory work). Some MS use 'free-lancers' (non-exclusive personnel), mainly to save on costs, the control of which is not ensured (in terms of for example appropriate qualifications and/or conflict of interest) nor included under any national training or quality management system. This results in no clear lines of responsibilities in performance of tasks under controlled conditions. PM9a introduces a definition of flag State	SO2: Ensure adequate inspections and monitoring/oversight

Policy measure	Short description	Link to a specific objective
	inspector, not allowing the use of such non-exclusives, which is a measure over and above the requirement of the III-Code. This measure will have an impact on those MS that use non-exclusive surveyors, meaning that they are legally required to increase the number of their exclusive surveyors. It would also have the effect of a more level playing field. The drawback is that even if a FS administration would get the resources there is no guarantee they will be able to attract the technical expertise needed. For some of the big flag States using such non-exclusive staff, the element of travel will also become a factor, as they need to be able to provide such inspections all over the world.	
PM9b: Frame when non-statutory staff can be used and for what inspections	This measure would not explicitly forbid the use of non-exclusives but would specify under what circumstances flag States can use other technical personnel i.e. if work is precisely described (not statutory); if such staff have proven qualification and training for the work; if the work is supervised and the report is signed off by a flag State inspector, plus such technical personnel is free from any commercial, financial or other interests in the ship subject to inspection. This will be specified in relation to the existing requirement for MS to maintain and update a Quality Management System for their flag State related parts certified. This measures will have less impact than PM9a on MS using such non-exclusive staff and recognise the possible difficulty in attracting technical expertise, and instead focus on the quality of the work performed rather than the status of the person performing it.	SO2: Ensure adequate inspections and monitoring/oversight
PM10: Introduce specific requirement regarding inspections, commensurate with the size and type of fleet	This measure would introduce a requirement which would specify the number of flag State inspections, commensurate with the size and type of fleet e.g. by establishing a ratio between the minimum number of flag State inspectors and ship and/or flag State inspectors and RO or a percentage of flag State inspections that should be performed on the flagged fleet every year – to achieve a	SO2: Ensure adequate inspections and monitoring/oversight

Policy measure	Short description	Link to a specific objective
	higher level of harmonisation with regard to inspection and control. PM10 would be done in full consultation with MS and industry, via comitology. There is a very wide difference in the extent to which FS inspections are actually done and there is therefore a need to gain experience first. For the assessment, it is assumed that 25% of the MS flagged fleet would be inspected per year, in line with the current EU level average, so that the entire fleet would be inspected over a four year period. The impact is expected to be higher for those MS that do not do any flag State inspections. On the other hand the requirement to do flag State inspections is already mandatory in the III-Code. Without more precise requirements the current situation may lead in time to unfair competitive advantage for flag States not doing any flag State inspections or very few.	
PM11a: Require flag States to do the International Safety Management (ISM) audit and issue ISM Certificates (Statutory), combined with a number of flag States inspections to be performed	The approach for PM11a, while not specified in the III-Code, is a more general requirement that a flag State only issues international certificates to a ship after it has determined that the ship meets all applicable standards. That is normally done by surveying/inspecting the ship. Current Article 4.1 includes a requirement to assess, where possible, a vessel flagging-in before issuing the certificates, but the requirement is not firm or specific and some MS may do so, others may not or not to the same extent. PM11a introduces the requirement that MS shall perform statutory surveys and issue the first certificates when the vessel is registered under their flag for the first time (thereafter ROs will continue to survey the vessels in so far as MS use RO's) in relation to survey/audit for the International Safety Management Code (ISM) only, which is a reduced scope of work as compared to doing all statutory surveys. This measure would also introduce a requirement which would specify the number of flag State inspections, commensurate with the size and type of fleet. This would be done in full consultation with MS and industry, via comitology. For the assessment, it is assumed that 10% of	SO2: Ensure adequate inspections and monitoring/oversight

Policy measure	Short description	Link to a specific objective
	the MS flagged fleet would be inspected per year, so that the entire fleet would be inspected over a ten year period.	
PM11b: Require full statutory survey by flag States when 'high risk' ships wish to register under a MS flag	PO11b introduces the requirement on MS to perform the first survey and certification only for those vessels that have the status of 'high risk ship' (according to the PSC system THETIS) which will mean a reduction in the number of ships to be surveyed relative to PM11a. PM11b would however not be limited to ISM only but concern all statutory surveys. It will focus on ships that would be targeted in PSC as considered more risky based on the THETIS system risk factors. This means a more focussed approach on those ships that may pose a higher risk. MS will be required to have appropriate technical capacity and resources which could nevertheless also be used for PM7 (the RO oversight programme).	SO2: Ensure adequate inspections and monitoring/oversight

ANNEX 14: OTHER RELEVANT LEGISLATION

Besides the III-Code and the key Directives mentioned in section 1 (synergies with other EU policy instruments), there are other key regulatory obligations for flag States listed below:

- **Directive 2009/16/EC** on port State control
- **Directive 2009/18/EC** on maritime accident investigation
- **Directive 2009/15/EC** on common rules and standards for ship inspection and survey organisations and for the relevant activities of maritime administrations
- **Regulation (EC) No 391/2009** on common rules and standards for ship inspection and survey organisations (Recognised organisations)
- **Commission Implementing Directive 2014/111/EU** amending Directive 2009/15/EC with regard to the adoption by the International maritime Organisation (IMO) of certain codes and related amendments to certain conventions and protocols
- **Commission Implementing Regulation (EU) No 1355/2014** amending Regulation (EC) No 391/2009 with regard to the adoption by the International maritime Organisation (IMO) of certain codes and related amendments to certain conventions and protocols
- **Directive (EU) 2017/2110** on a system of inspections for the safe operation of ro-ro passenger ships and high-speed passenger craft in regular service and amending Directive 2009/16/EC and repealing Council Directive 1999/35/EC
- **Regulation (EC) No 1406/2002** establishing a European Maritime Safety Agency

ANNEX 15: EFFECTIVENESS OF THE DIFFERENT POLICY OPTIONS

Key: Impacts expected					
××	×	O	✓	✓✓	
Strongly negative	Negative	No or negligible impact	Positive	Strongly positive	Unclear
	PO1		PO2	PO3	PO4
Specific policy objective 1: Align the Flag State Directive with new international rules					
Expected improvement in clarity and functioning of the internal market	Positive effect in removing any ambiguity for flag States authorities having regard to the alignment of the Flag State Directive with the III-Code, including the IMO Audit. Positive effect on the functioning of the internal market through improved clarity.		Positive effect in removing any ambiguity for flag States authorities having regard to the alignment of the Flag State Directive with the III-Code, including the IMO Audit. Positive effect on the functioning of the internal market through improved clarity.	Positive effect in removing any ambiguity for flag States authorities having regard to the alignment of the Flag State Directive with the III-Code, including the IMO Audit. Positive effect on the functioning of the internal market through improved clarity.	Positive effect in removing any ambiguity for flag States authorities having regard to the alignment of the Flag State Directive with the III-Code, including the IMO Audit. Positive effect on the functioning of the internal market through improved clarity.
Specific policy objective 2 – Ensure adequate inspections and monitoring/oversight					
Changes in the number of fatalities and injuries involving EU Member States flagged vessels	Positive impact on the number of lives saved and injuries avoided, although not quantified, through the EU Oversight programme of flagged fleet and RO's.		Positive impact on the number of lives saved and injuries avoided, although not quantified, through the EU Oversight programme of flagged fleet and RO's. Positive impact on the	Positive impact on the number of lives saved and injuries avoided, although not quantified, through the EU Oversight programme of flagged fleet and RO's. Positive impact on the	Positive impact on the number of lives saved and injuries avoided, although not quantified, through the EU Oversight programme of flagged fleet and RO's. Positive impact on the

Key: Impacts expected					
××	×	O	✓	✓✓	
Strongly negative	Negative	No or negligible impact	Positive	Strongly positive	Unclear
	PO1		PO2	PO3	PO4
			number of lives saved and injuries avoided (69 lives saved and 810 injuries avoided) during 2025-2050 relative to the baseline by means of specific requirements regarding inspections, commensurate with the size and type of fleet.	number of lives saved and injuries avoided (11 lives saved and 180 injuries avoided) during 2025-2050 relative to the baseline by means of International Safety Management (ISM) audit, combined with a number of FS inspections to be performed.	number of lives saved and injuries avoided (16 injuries avoided) during 2025-2050 relative to the baseline by means of full statutory survey by FS when 'high risk' ships wish to register under a MS flag.
Changes in the number of tonnes of bunker fuel lost at sea involving EU Member States flagged vessel	Positive impact on the environment, although not quantified, through the EU Oversight programme of flagged fleet and RO's. This is expected to have a positive impact on the quality of marine water and biodiversity.		Positive impact on the environment, although not quantified, through the EU Oversight programme of flagged fleet and RO's. Positive impact on the environment (1,418 tonnes of bunker fuel lost avoided between 2025 and 2050, relative to the baseline) by means of specific requirements regarding inspections, commensurate with the size and type of	Positive impact on the environment, although not quantified, through the EU Oversight programme of flagged fleet and RO's. Positive impact on the environment (321 tonnes of bunker fuel lost avoided between 2025 and 2050, relative to the baseline) by means of International Safety Management (ISM) audit, combined with a number of FS inspections to	Positive impact on the environment, although not quantified, through the EU Oversight programme of flagged fleet and RO's. Positive impact on the environment (31 tonnes of bunker fuel lost avoided between 2025 and 2050, relative to the baseline) by means of full statutory survey by FS when 'high risk' ships wish to register under a MS flag. This is

Key: Impacts expected					
××	×	O	✓	✓✓	
Strongly negative	Negative	No or negligible impact	Positive	Strongly positive	Unclear
	PO1		PO2	PO3	PO4
			fleet. This is expected to have a positive impact on the quality of marine water and biodiversity.	be performed. This is expected to have a positive impact on the quality of marine water and biodiversity.	expected to have a positive impact on the quality of marine water and biodiversity.
Specific policy objective 3: Ensure a higher uptake of digital solutions					
Enforcement costs savings for flag State authorities due to the uptake of digital solutions	Positive impact on enforcement costs for flag State authorities. Cost saving estimated at EUR 47.7 to 50.8 million, expressed as present value over the period 2025-2050 relative to the baseline.		Positive impact on enforcement costs for flag State authorities. Cost saving estimated at EUR 48.8 to 52.9 million, expressed as present value over the period 2025-2050 relative to the baseline.	Positive impact on enforcement costs for flag State authorities. Cost saving estimated at EUR 48 to 51.3 million, expressed as present value over the period 2025-2050 relative to the baseline.	Positive impact on enforcement costs for flag State authorities. Cost saving estimated at EUR 47.7 to 50.8 million, expressed as present value over the period 2025-2050 relative to the baseline.
Adjustment costs savings for ship operators due to the uptake of digital solutions	Positive impact on adjustment costs for ship operators. Cost saving estimated at EUR 0.4 to 0.9 million, expressed as present value over the period 2025-2050 relative to the baseline.		Positive impact on adjustment costs for ship operators. Cost saving estimated at EUR 0.6 to 1.2 million, expressed as present value over the period 2025-2050 relative to the baseline.	Positive impact on adjustment costs for ship operators. Cost saving estimated at EUR 0.5 to 1 million, expressed as present value over the period 2025-2050 relative to the baseline.	Positive impact on adjustment costs for ship operators. Cost saving estimated at EUR 0.4 to 0.9 million, expressed as present value over the period 2025-2050 relative to the baseline.

Key: Impacts expected					
××	×	O	✓	✓✓	
Strongly negative	Negative	No or negligible impact	Positive	Strongly positive	Unclear
	PO1		PO2	PO3	PO4
Specific policy objective 4: Ensure a harmonised approach in the understanding, reporting and measuring performance of flag State fleets and duties					
Increased compliance and convergence in the application of the rules between MS flagged fleets	Positive impact by better understanding of the rules and more harmonised approach so that in the end it should not matter, from a safety point of view, under which EU MS flag a ship sails. They should all be subjected to the same control and ensure compliance, leading to quality shipping.		Positive impact by better understanding of the rules and more harmonised approach so that in the end it should not matter, from a safety point of view, under which EU MS flag a ship sails. They should all be subjected to the same control and ensure compliance, leading to quality shipping.	Positive impact by better understanding of the rules and more harmonised approach so that in the end it should not matter, from a safety point of view, under which EU MS flag a ship sails. They should all be subjected to the same control and ensure compliance, leading to quality shipping.	Positive impact by better understanding of the rules and more harmonised approach so that in the end it should not matter, from a safety point of view, under which EU MS flag a ship sails. They should all be subjected to the same control and ensure compliance, leading to quality shipping.