



EU MRV Monitoring Plan

Content & Guidance

Verify. Comply. Navigate. ®

World Wide Web, 8 & 9 June 2017
www.verifavia-shipping.com



- A - Introduction & Agenda
- B - EU MRV Monitoring Plan: regulatory framework
- C - EU MRV Monitoring Plan: an overview
- D - EU MRV Monitoring Plan: step-by-step process
- E - About Verifavia Shipping
- F - Q&A & Final Note

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19.5.2015

EN

Official Journal of the European Union

L 123/55

REGULATION (EU) 2015/757 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 29 April 2015

on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC

(Text with EEA relevance)



Delegated Regulation (EU) 2016/2071

Shipping Emissions Monitoring Methods

Implementing Regulation (EU) 2016/1928

Shipping Emissions Cargo Carried

Implementing Regulation (EU) 2016/1927

Shipping Emissions Templates

Delegated Regulation (EU) 2016/2072

Shipping Emissions Verification & Accreditation

**23 legal
questions and
answers**

Frequently Asked Questions on the implementation of the MRV shipping Regulation

These Frequently Asked Questions aim to assist MRV (monitoring, reporting and verification) companies, verifiers and other stakeholders to implement the European Union MRV shipping legislation. It requires ships carrying out maritime transport activities to or from EEA ports to monitor and report information including verified data on their CO₂ emissions from 1st of January 2018.

The legal framework for these obligations is established under [Regulation \(EU\) 2015/757](#) on monitoring, reporting and verification of carbon dioxide emissions from maritime transport, (the MRV Shipping Regulation) which has been amended by [Delegated Regulation 2016/2072](#) and it is to be read in conjunction with [Delegated Regulation \(EU\) 2016/2071](#) and [Implementing Regulations \(EU\) 2016/1927](#) and [2016/1928](#).

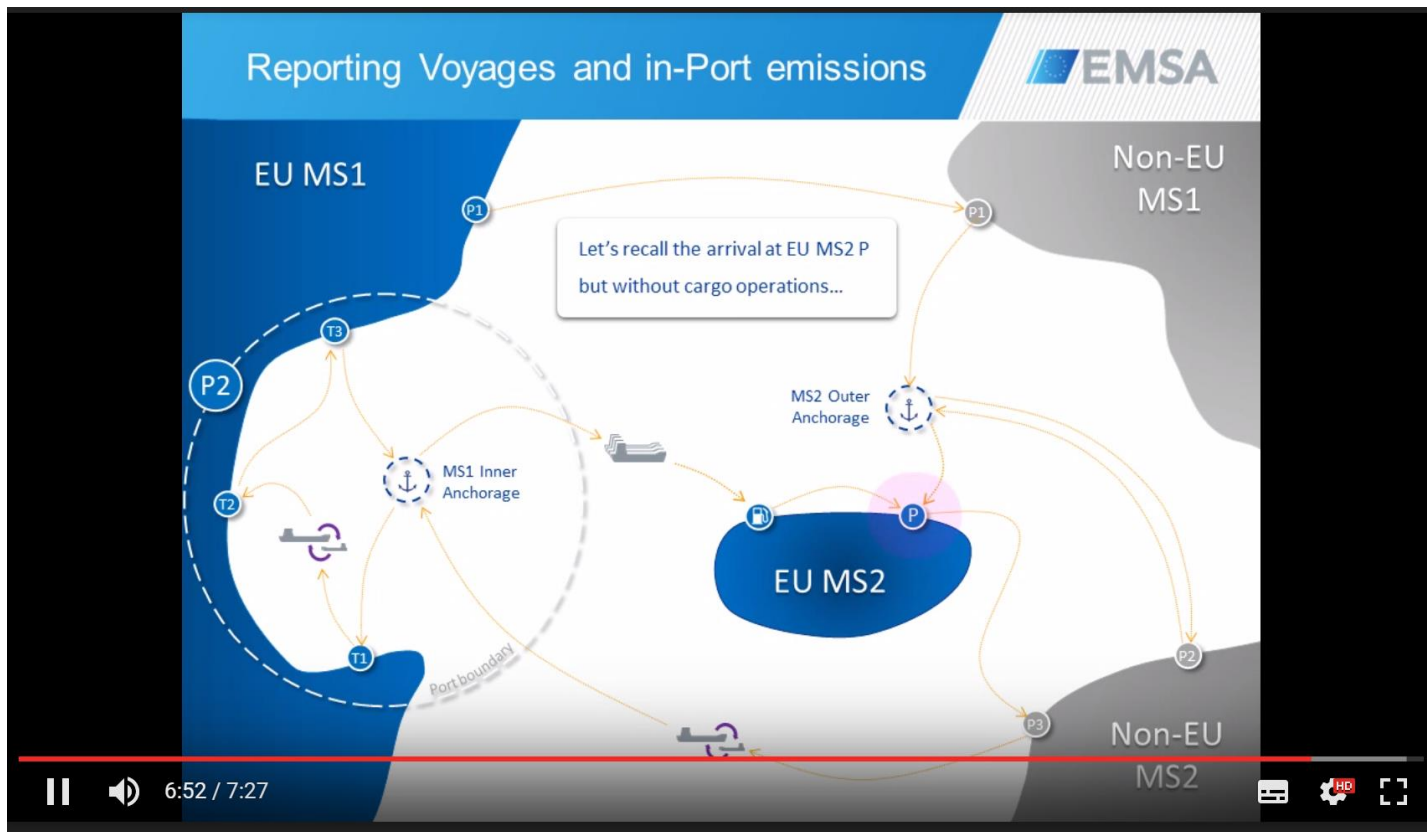
SECTION V ON MONITORING PLANS

12. 12. Shall MRV companies submit a monitoring plan for each of the ships under their responsibility?

13. 13. Submission of monitoring plans to the verifier?

14. 14. What is the minimum content and format of the monitoring plan?

Monitoring & Reporting	Verification & Accreditation
Guidance for fuel oil monitoring	Guidance on the use of ship's tracking data
Guidance for LNG-BoG monitoring	Guidance on recommendations for improvement
Guidance on EIV	Guidance on materiality and sampling
Guidance on Monitoring Plan preparation	Guidance on backward assessment
Guidance on monitoring voyages and in ports	Guidance on the verification of the emissions report
Guidance on Monitoring using the exemption from per-voyage monitoring	Guidance on assessment of verifiers
Guidance on the determination of distance travelled and time spent at sea	Guidance on suspension of accreditation
Guidance on Determination of cargo carried	Guidance on assessment of monitoring plans



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- A mandatory **requirement of the EU MRV Regulation** Article 6
- Must be submitted **to an independent accredited verifier before 31st August 2017** for assessment
- Assessment must be **successfully completed before 31 December 2017**
- 31st August and 31st December are only deadlines, **process can be completed earlier**
- Important to note the difference between **assessment** and **verification**

The Monitoring Plan - can be designed based on existing infrastructure and statutory documents

- Outlines the procedures in place to **monitor**, **collect**, **control**, and **report** data for the EU MRV
- Demonstrates how the ship's MRV system is **compliant with the EU MRV Regulation**
- Compiles all **information** on how the ship's MRV system works, and must be **complete**, **accurate**, **relevant** and **compliant**
- Where relevant, references should be made to compatible monitoring elements **from existing management systems** (e.g. SMS, SEEMP, EMS, etc.)
- **Format** and **structure** of plans are **flexible**
- All required elements for all ships may be compiled in one single document

Main objective of monitoring plan is to describe how per-voyage data will be monitored



Fuel
Consumption
at Sea



Fuel
Consumption
at berth



Time
at Sea



Distance
Sailed



Cargo
On-board



Transport
work



Energy
Efficiency
parameters

! *Fuel consumption, time at sea and distance sailed shall be monitored from berth to berth*

! *Fuel consumption within ports at berth shall be monitored separately*

! *Ships performing more than 300 voyages per year all subject to the EU MRV are exempt from per-voyage monitoring*

$$\text{Transport work} = \text{Cargo on-board} * \text{Distance sailed}$$

Part A – versions

Date, status, version #

Part B - Basic data

IMO, name, operator / owner, GT,...
Emissions sources & fuel types

Part C - Activity data

Fuel consumption method (A, B, C, D)
Determination of density
Measurement instruments & uncertainty
Procedures for :

- Completeness of on-board sources
- Fuel bunkered, fuel in tanks
- BDN cross-checks
- Data collection & transmission
- Quality of measuring equipment
- Completeness of voyages
- Cargo, distance and time

Part D - Data gaps

Expected method if “main” method documented in MP Part C failed:

- fuel consumption
- distance travelled
- time spent at sea
- cargo carried

Part E – Management

Regular check of the adequacy of the MP
Control activities:

- Quality assurance and reliability of IT systems
- Internal reviews and validation of data
- Corrections and corrective actions
- Outsourced activities (if applicable)

Part F – Further information

Free text, optional

B.1 Identification of the ship

(a) Name of the ship	<input type="text"/>
(b) IMO identification number	<input type="text"/>
(c) Port of registry	<input type="text"/>
(d) Home port (if not identical with port of registry)	<input type="text"/>
(e) Name of the shipowner	<input type="text"/>
(f) IMO unique company and registered owner identification number	<input type="text"/>
(g) Type of the ship	<input type="text" value="Please select"/>
(h) Deadweight (in metric tonnes)	<input type="text"/>
(i) Gross tonnage	<input type="text"/>
(j) Classification Society (voluntary)	<input type="text"/>
(k) Ice class (voluntary)	<input type="text"/>

REMINDER - Which ships are included in the EU MRV Regulation?



Ships exceeding 5'000 GT



Regardless of Flag or country of ownership



Calling at an EU port from 1 January 2018



And carrying cargo or passengers for commercial purposes

REMINDER

- Exempted ships:
 - warships
 - naval auxiliaries
 - fish-catching or fish-processing ships
 - wooden ships of a primitive build
 - ships not propelled by mechanical means
 - government ships used for non-commercial purpose
- Ships used for...
 - dredging
 - ice-breaking
 - pipe laying
 - offshore installation activities.

... are also exempted if not serving the purpose of transporting cargo or passengers for commercial purposes

B.2 Company information

MP TEMPLATE

(a) Please enter the name and address of the company, including postcode and country:

Name of the company	
Address Line 1	
Address Line 2	
City	
State/Province/Region	
Postcode/ZIP	
Country	Please select
Contact person	
Telephone number	
Email address	



The responsible entity is the **Company**

The **Company** means ‘the shipowner or any other organisation or person, such as the manager or the bareboat charterer, which has assumed the responsibility for the operation of the ship from the shipowner’

>>> similar to the Company in the ISM Code

B.3 Emission sources and fuel types used

MP TEMPLATE

Emission source reference no.	Emission source (name, type)	Technical description of emission source (performance/power, specific fuel oil consumption (SFOC), year of installation, identification number in case of multiple identical emission sources, etc.)	(Potential) Fuel types used
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select

REMINDER



- Main engines
- Auxiliary engines
- Boilers
- Gas turbines
- Inert gas generators

! *Incinerators do not have to be considered*

B.4 Emission factors

Fuel type	IMO emission factors (in tonnes of CO2/ tonne fuel)
Heavy Fuel Oil (Reference: ISO 8217 Grades RME through RMK)	3.114
Light Fuel Oil (Reference: ISO 8217 Grades RMA through RMD)	3.151
Diesel/Gas Oil (Reference: ISO 8217 Grades DMX through DMB)	3.206
Liquefied Petroleum Gas (Propane)	3.000
Liquefied Petroleum Gas (Butane)	3.030
Liquefied Natural Gas	2.750
Methanol	1.375
Ethanol	1.913
Other fuel with non-standard emission factor	

In case of use of non-standard emission factors:

Non-standard fuel	Emission factor	Methodologies for determining the emission factor (methodology for sampling, methods of analysis and a description of the laboratories used, if any)

C.2.1 Methods used to determine fuel consumption of each emission source:

Emission source	Chosen method for fuel consumption
Please select	Please select
Please select	Please select
Please select	Please select

C.2.6 Method for determination of density:

Fuel type/tank	Method to determine actual density values of fuel bunkered	Method to determine actual density values of fuel in tanks
	Please select	Please select
	Please select	Please select
	Please select	Please select
	Please select	Please select
	Please select	Please select

! Available options are Measurement equipment, Fuel supplier, Laboratory test

Four available monitoring methodologies available

Method A
Bunker Fuel
Delivery Note (BDN)
and periodic
stocktakes of fuel
tanks

Method B
Bunker fuel tank
monitoring on
board

Method C
Flow meters for
applicable
combustion
processes

Method D
Direct CO₂
emission
measurements.

$$\text{CO}_2 \text{ Emissions} = \text{Fuel consumption} * \text{Emission factor}$$

! *It is possible to choose a different methodology for each emission source*

C.2.4 Description of the measurement instruments involved:

Measurement equipment (name)	Elements applied to (e.g. emission sources, tanks)	Technical description (specification, age, maintenance intervals)

C.2.7 Level of uncertainty associated with fuel monitoring:

Monitoring method	Approach used	Value
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	

! Available options are ship-specific value or default value (10% for Methods A, B and C as per guidance document on fuel monitoring)

Title of procedure	
Reference to existing procedure	
Version of existing procedure	
Description of EU MRV procedures if not already existing outside the MP	
Name of person or position responsible for this procedure	
Location where records are kept	
Name of IT system used (where applicable)	

- Procedures, systems and responsibilities used to update the completeness of emission sources
 - E.g. change of emission sources following retrofitting
- Procedures for determining fuel bunkered and fuel in tanks
 - E.g. fuel tank sounding, fuel tank monitoring, BDNs, etc.
- Regular cross-checks between bunkering quantity as provided by BDN and bunkering quantity indicated by on-board measurement:
 - E.g. cross-check between BDNs and fuel tank readings before / after bunkering
- Procedures for recording, retrieving, transmitting, and storing information regarding measurements
 - E.g. description of successive steps from collection of primary source data on-board to storage of data in on-shore database (fuel tank readings, fuel flow data, etc.)
- Procedures for ensuring quality assurance of measuring equipment
 - E.g. maintenance procedures

- **Recording and safeguarding completeness of voyages**
 - E.g. how ports of call are defined according to the Regulation, how voyages are constructed, and how reportable voyages are identified
- **Recording and determining the distance per voyage made**
 - E.g. actual distance sailed, or distance on the most direct route + correction factor
- **Recording and determining the amount of cargo carried and/ or the number of passengers**
 - E.g. how information from bills of lading, cargo manifest, etc. are collected and transferred into the IT system or database
- **Determining and recording the time spent at sea from berth of port of departure to berth of the port of arrival**
 - E.g. how time of departure and time of arrival are collected and transferred into the IT system or database

- A **port of call** is a port where a ship stops to load or unload cargo or to embark or disembark passengers
 - Consequently, stops for the sole purposes of refuelling, obtaining supplies, relieving the crew, going into dry-dock or making repairs to the ship and/or its equipment, stops in port because the ship is in need of assistance or in distress, ship-to-ship transfers carried out outside ports, and stops for the sole purpose of taking shelter from adverse weather or rendered necessary by search and rescue activities are not ports of call
- A **voyage** is a journey between two consecutive ports of call
- An **EU MRV voyage** is when at least one of the two ports of call is in the EEA
- **Ballast voyages** shall be considered same as **laden voyages**

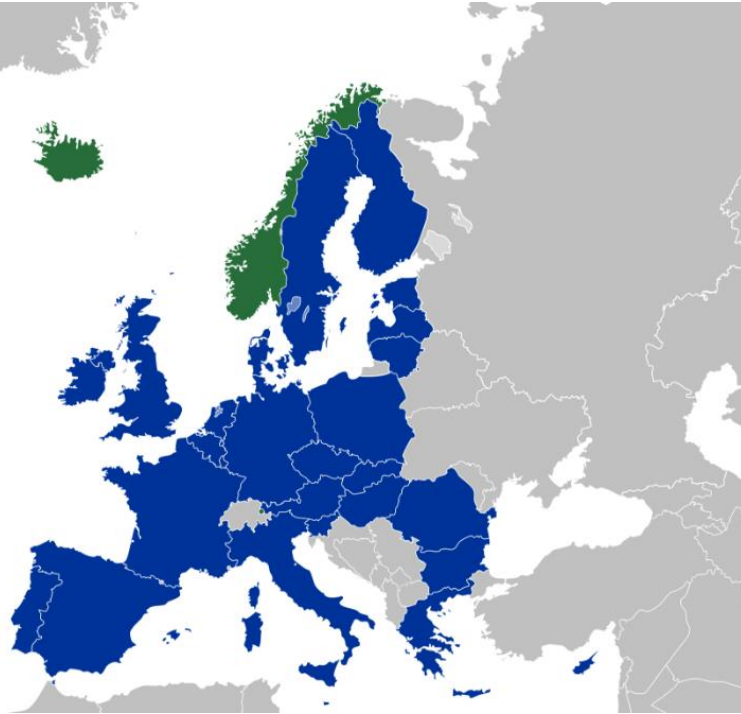
REMINDER - Which voyages must be reported?

REMINDER

- A Port of Call is a port where a ship stops to load or unload cargo or to embark or disembark passengers
- A voyage is a journey between two Ports of Call
- A reportable voyage is a voyage where at least one Port of Call is in the EU



All voyages calling at an EEA port of call are subject to EU MRV



EU Member States: Belgium, Bulgaria, Croatia, Republic of Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden and the UK.

EEA Member States: EU Member States + Iceland + Norway

EEA outermost regions: see next slide

What are the EEA outermost regions?

All voyages calling at a port of call located in an EEA outermost region are also subject to EU MRV

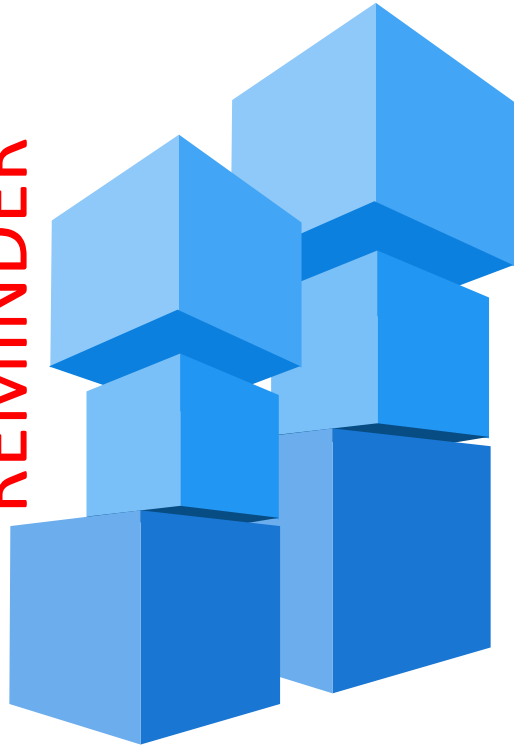
REMINDER



EEA outermost regions: Açores, Canary Islands, French Guiana, Guadeloupe, Madeira, Martinique, Reunion and Saint Martin

REMINDER - How shall cargo be monitored?

REMINDER



Ship Type	Cargo to be monitored per ship type
Oil tankers, chemical tankers, gas carriers, bulk carriers, refrigerated cargo ships and combination carriers	Actual mass of the cargo on-board
LNG carriers	Volume of cargo on discharge
Pax ships	Number of passengers
Ro-ro ships	Occupied lane-meters * default weight OR, nb of cargo units * default weight OR, actual mass of the cargo on-board
Container ships	Actual mass of the cargo OR, nb of TEU * default weight
Ro-pax	Passengers: number of pax Freight: same Ro-ro ships
Con-ro ships	Volume of cargo on-board
Vehicle carriers and general cargo ships	Mass of cargo and / or deadweight carried

- **Methods to be used to estimate fuel consumption**
 - E.g. use of historic fuel data, use of alternative fuel consumption monitoring methodology, or use of modelled fuel consumption
- **Methods to be used to treat data gaps regarding distance travelled**
 - E.g. use of online calculator to get distance on the shortest route
- **Methods to be used to treat data gaps regarding time spent at sea**
 - E.g. use of average time for similar voyages, or average time per NM
- **Methods to be used to treat data gaps regarding cargo carried**
 - E.g. use of historic loads or estimated loads based on draught measurements or alternative source of information

- Regular check of the adequacy of the monitoring plan
 - E.g. check that all procedures are still adequate
- Control activities: Quality assurance and reliability of information technology
 - E.g. contractual arrangement with ICT providers
- Control activities: Internal reviews and validation of EU MRV relevant data
 - E.g. plausibility checks on the data, check by another person (four-eye principle), comparison with independent data sources, etc.
- Control activities: Corrections and corrective actions
 - E.g. procedure to ensure that issues are corrected in a timely manner
- Control activities: Outsourced activities (if applicable)
 - E.g. if a third-party organisation is used for any EU MRV task

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1 2 3 4 5 6

- List all vessels for which your are the ‘**Company**’:
 - *‘the shipowner or any other organisation or person, such as the manager or the bareboat charterer, which has assumed the responsibility for the operation of the ship from the shipowner’*
 - Nb: same definition as DOC holder under ISM Code
- Remove vessels that are below 5000 GT
- Remove vessels that do not operate for commercial purposes
- Remove vessels that never call EU ports and are not expected do so in 2018
- Option: Identify ship families and groups of sister-ships

1 2 3 4 5 6

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Shipping Emissions Templates

Implementing Regulation (EU) 2016/1928

Shipping Emissions Cargo Carried

Commission's FAQ

Guidance documents *[To be published]*

1 2 3 4 5 6

Company information

Data gaps

Management

Ship family specific procedures

All other
procedures

Lead ship specific information

List of emissions sources
Description of measuring equipment

STEP 4 - COLLECT RELEVANT DOCUMENTS

1 2 3 4 5 6

- ✓ SEEMP
- ✓ Arrangement plan
- ✓ Bunkering procedure
- ✓ Piping diagrams
- ✓ Fuel management procedure
- ✓ Fuel measurement equipment description
- ✓ Other relevant manuals / procedures



Part A - Versions



Part B - Basic data



Part C - Activity data



Part D - Data gaps



Part E - Management



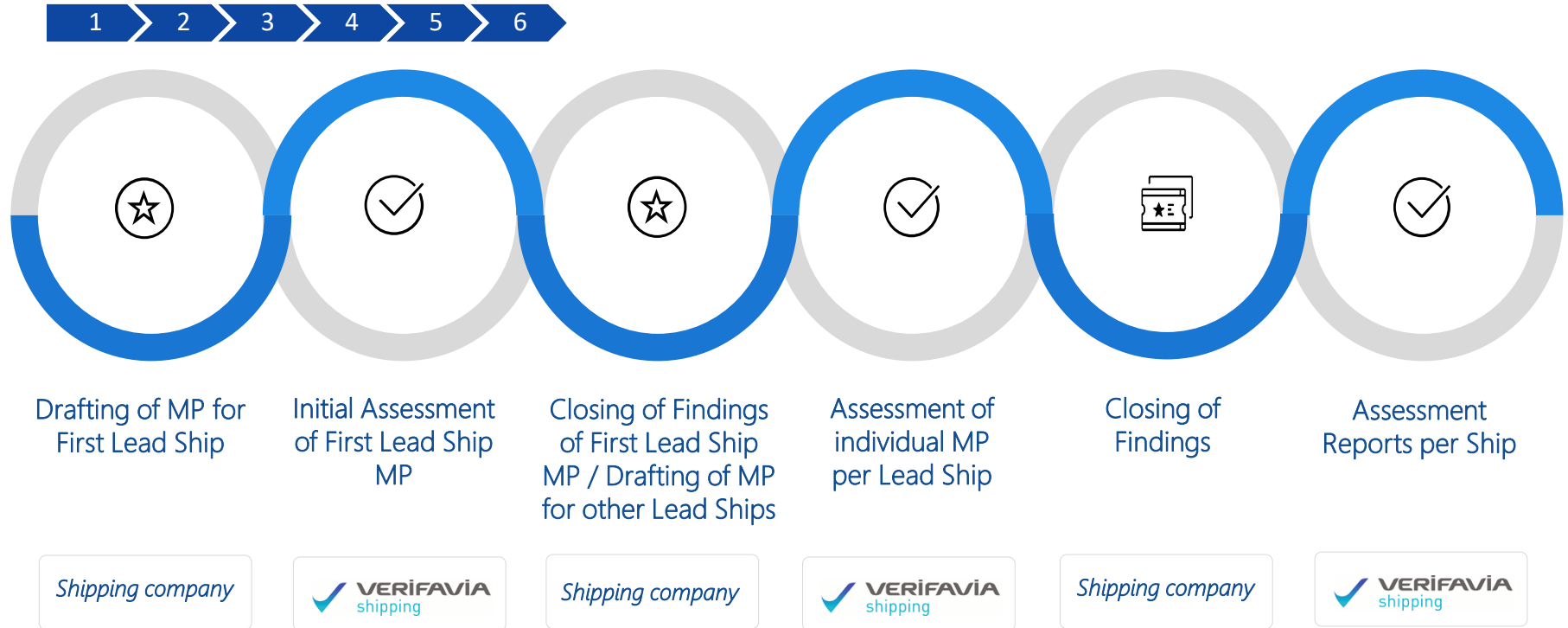
Part F - Further information

Possible formats:

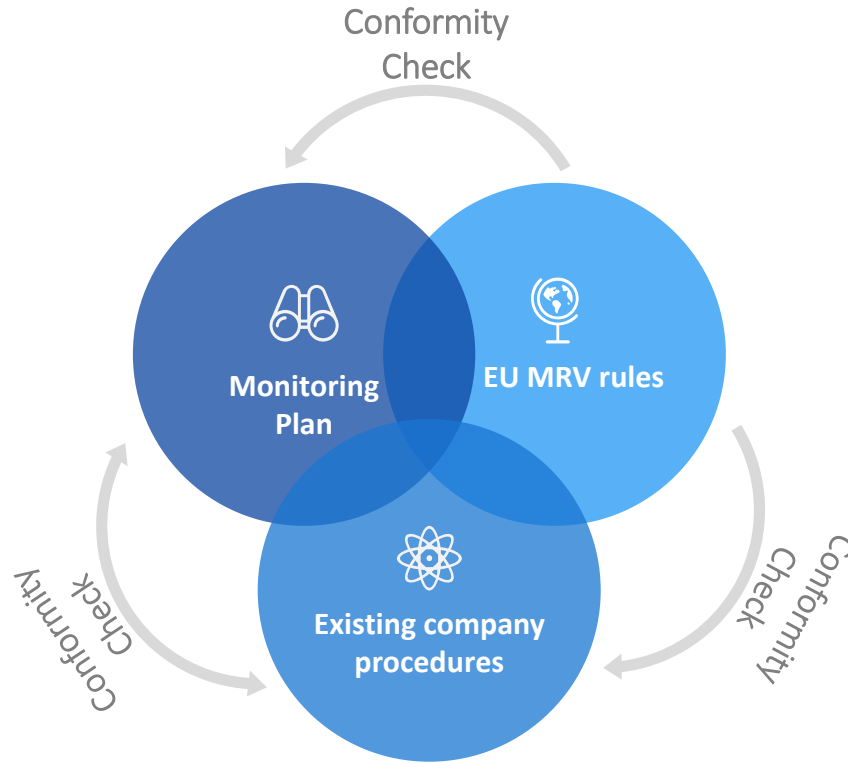
- Word document
- Excel document
- Online / offline form
- IT system
- Etc.

! *It is possible to have one single monitoring plan for the entire fleet covering the company-specific procedures only once*

STEP 6 - ENGAGE AN INDEPENDENT ACCREDITED VERIFIER AND HAVE YOUR MP ASSESSED



Aim of MP assessment is to check consistency between EU MRV rules, Monitoring Plan, and existing company procedures



- ✓ Completeness
- ✓ Accuracy
- ✓ Relevance
- ✓ Conformity

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We are the V of MRV

Verifavia is a global independent accredited environmental verification, certification and auditing body for aviation, airports and maritime transport (shipping and ports).



Verifavia Shipping is the first and only global accredited EU MRV verification body with double accreditation!

Our ISO 14065 accreditation allows us to assess and verify **any ship anywhere in the world regardless of country, Flag State or class.**

We requested accreditation from the French National Accreditation Body (COFRAC) to anticipate the Brexit.

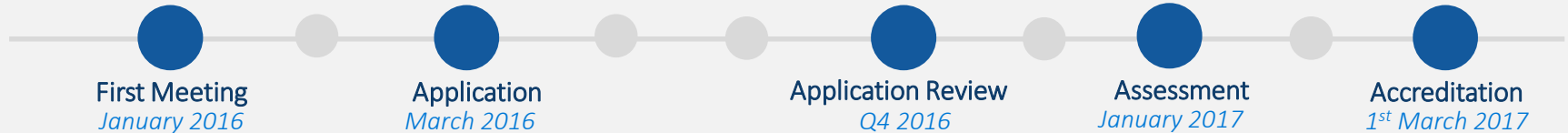


4599



Accreditation
n° 4-0596
Scope available on
www.cofrac.fr

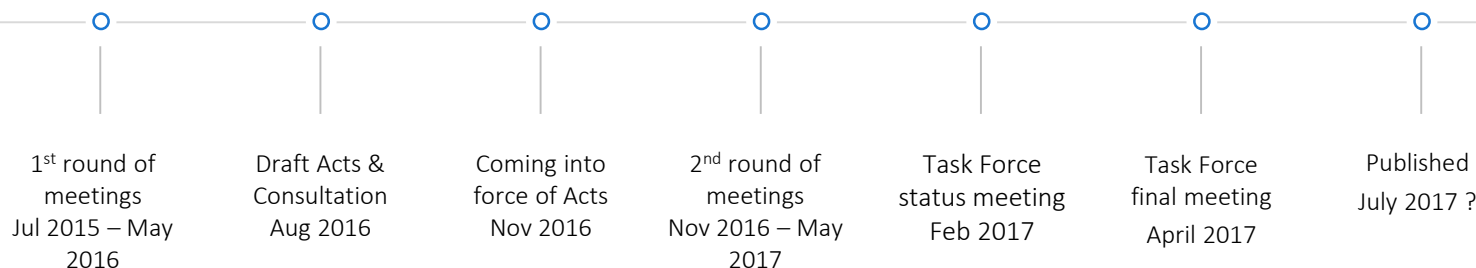
Timeline of the accreditation process



Verifavia Shipping is the task leader of the Commission's task force on the verification of the emissions report

Objective of the working group is to draft the guidance document addressed to verifiers on how to verify an emission report

Representatives from major classification societies are part of the working group which is led by Verifavia Shipping CEO.



Verifavia Shipping provides its customers with an Extranet to facilitate exchanges during the assessment of Monitoring Plans (voluntary and at no extra cost)



Verify, Comply, Navigate



Verifavia Shipping >

Extranet for EU MRV Monitoring Plans assessment by Verifavia Shipping

This Extranet is available for shipowners and management companies who have an legal agreement in place with Verifavia Shipping for the assessment of the Monitoring Plans (MPs) required by the Regulation 2015/757 on the Monitoring, Reporting and Verification of carbon emissions of large ships visiting EU ports for commercial purposes (EU MRV).

The aim of this Extranet is to facilitate the exchanges of information, documents and data between the shipping companies and Verifavia Shipping as part of the legal assessment audit.

Legal submission deadline is 31 August 2017.

Log in

My account

Username

Password

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> LOG IN

[Remember me](#) ☐

Create your account

> SIGN UP

[Online help](#)

Verifavia Shipping is one of the first independent verifiers to conduct GAP-Analysis audits against the requirements of the EU MRV Regulation



Verifavia Shipping is one of the first independent verifiers to conduct legal monitoring plan assessment audits against the requirements of the EU MRV Regulation



CHIOS NAVIGATION (HELLAS) LTD



Verifavia Shipping is one of the first independent verifiers to conduct legal monitoring plan assessment audits against the requirements of the EU MRV Regulation



Verifavia Shipping is one of the first independent verifiers to conduct legal monitoring plan assessment audits against the requirements of the EU MRV Regulation



CHINA NAVIGATION



MMSL

Verifavia Shipping is the world's market leader working with global ICT providers in the independent certification of EU MRV IT systems

Certified EU MRV IT systems



EU MRV IT systems under certification





Julien Dufour, CEO



Nicolas Duchene,
Technical Director



Nikolas Theodorou,
Managing Director



Steffen Kotergaard, Marine Engineer
& Commercial Manager Denmark



Yuvraj Thakur, Marine Engineer &
Commercial Head Asia – Pacific



Islam Abdelazim,
Marine Engineer



Nick Filos, Marine &
Mechanical Engineer



Stylianos Smyrlakis, Naval
Architect, Marine Engineer



Vikas Sharma,
Marketing analyst
www.verifavia-shipping.com



Maxime Wets,
Marine Engineer



Alonso Benito, Naval architect,
Marine Engineer



Beata Kusova,
Auditor



Gary Cleven,
Auditor

Our Global Presence



Why choose Verifavia Shipping?



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Thank You

Get in touch with us!

Julien Dufour, CEO

Nicolas Duchêne, Technical Director

Yuvraj Thakur, Lead EU MRV Auditor, Commercial Head- APAC

Verifavia (UK) Ltd. :

20-22 Wenlock Road, London N1 7GU (UK), +44 207 117 2540

Verifavia SARL:

33 avenue du Maine, 75015 Paris (FR), +33 665 697 489

Verifavia Shipping (Hellas):

Par. Leof. Vouliagmenis 12, Voula 166 73 (Lefkados 12) (Greece)

+30 695 6302131

www.verifavia-shipping.com

