

**Independent EU MRV IT System Certification Report Opinion Statement -
Regulation 2015/757**



Certification of IT system for monitoring and reporting of fuel and emissions.

IT SYSTEM SUPPLIER DETAILS	
Name of applicant:	DANAOS Management Consultant SA
Address of applicant:	14 Akti Kondyli, 188 45 Piraeus, Greece
Name of developer:	-
Address of developer:	-
Name of IT system:	DANAOS MRV version 5.0.0 (and higher)
IT SYSTEM DETAILS	
Fuel consumption methodologies considered:	
Method A	Yes
Method B	Yes
Method C	Yes
Method D	No
Type of ships considered for the determination of cargo carried (as per the Implementing Act 2016/1928 on determination of cargo carried, 4 Nov. 2016):	
Passenger	No
Ro-ro	Yes
Container	Yes
Oil tanker	Yes
Chemical tanker	Yes
LNG carrier	No
Gas carrier	Yes
Bulk carrier	Yes
General cargo	Yes
Refrigerated cargo	Yes
Vehicle carrier	Yes
Combination carrier	Yes
Ro-pax	No
Container / ro-ro cargo	No

SITE VERIFICATION DETAILS	
Site visited during certification:	Yes
Date(s) of visit(s):	06.04.2017
Number of days for site visit:	1
Name of (lead) auditor(s) and technical experts undertaking site visit(s):	Nicolas Duchêne
Justification for not undertaking site visit:	N/A
System tested in detail:	Yes

COMPLIANCE WITH EU MRV RULES	
Monitoring Plan requirements met:	Yes The system includes functionality for the creation of Monitoring Plans.
EU Regulation on Monitoring met:	Yes For vessels using telegrams upon arrival and departure on a mandatory basis, the system was found to be compliant with the monitoring requirements of the EU MRV.
EU Regulation on per-voyage Reporting met:	Yes The system was found to be compliant with the mandatory EU MRV requirements in terms of reporting per voyage.
EU Regulation on annual Reporting met:	Yes The system was found to be compliant with the mandatory EU MRV requirements in terms of annual emissions reporting (see recommendations in Annex 1).


COMPATIBILITY OF DATA WITH THE REGULATORY PLATFORM 'THETIS EU MRV'	
Port_emissions.xml	Yes The emissions during EU / EEA port stays were address in rthe file Emissions.xml directly.
Voyage_emissions.xml	Yes The emissions (and other reportable parameters) of EU MRV voyages were addressed in the file Emissions.xml directly.
Emissions.xml	Yes The file 'Emissions.xml' generated by the system included data for EU MRV voyages, EU / EEA port stays and annual data (for the reporting period). The file was succesfully imported in THETIS MRV.
Emission_reports.xml	N/A The requirements associated to administrative and technical information as per files of type "Emissions_reports.xml" were not addressed by the system.

COMPLIANCE WITH SOFTWARE REQUIREMENTS (ISO IEC 25051 Software Engineering)	
Functionality:	Yes
Reliability:	Yes
User friendliness:	Yes
Efficiency:	Yes
Maintainability:	Yes
Transferability:	Yes
Quality of operations:	Yes

COMPLIANCE WITH SOFTWARE SECURITY REQUIREMENTS (ISO IEC 25051 Software Engineering)	
Organisation:	Yes
Data backup:	Yes
Data protection:	Yes
Computer virus protection concept:	Yes
Hard and software management:	Yes
Archiving:	Yes
Patch and change management:	Yes
Requirements management:	Yes

OPINION	
OPINION - certified as satisfactory:	VERIFAVIA (UK) LTD has conducted a certification of the EU MRV IT system DANAOS MRV developed and managed by DANAOS Management Consultant SA as presented above. On the basis of the certification work undertaken based on the agreed criteria (see Annex 2), the EU MRV IT system is considered to be in compliance with the requirements of the Regulation (EU) N° 2015/757, the associated Delegated and Implementing Acts and the ISO IEC 25051 standard on software engineering.

CERTIFICATION TEAM	
Lead Auditor:	Nicolas Duchêne
Auditor(s):	N/a
Technical Expert(s):	N/a
Independent Reviewer:	Julien Dufour
Technical Expert(s) (Independent Review):	N/a

Signed on behalf of VERIFAVIA (UK) LTD:	
Name of authorised signatory :	Julien Dufour
Date of Certificate :	20.03.2019

Name of verifier:	VERIFAVIA (UK) LTD
Contact Address :	20-22 Wenlock Road, London N1 7GU, United Kingdom Tel: +33 665 697 489 Email: julien.dufour@verifavia.com
Date of certification contract:	20.03.2017 & 09.08.2018

**Certification Report - Shipping Fuel & Emissions Regulations (EU MRV & IMO DCS)
 Certification of IT system for monitoring and reporting of fuel and emissions.**

DANAOS Management Consultant SA

Annex 1A - Non-compliances, Observations and Recommended Improvements

A Uncorrected Non-compliances with Shipping MRV Regulation which were identified during certification

A1	NOT APPLICABLE.
A2	
A3	
A4	
A5	

B Recommended Improvements, if any

B1	It is not possible to report voluntary fields when using the IT system MRV. A user would have to complete its Emission Report offline if he wished to report voluntary parameters. [Reg 2016/1927 Annex I]
B2	[ro-pax, pax, ro-ros, container / ro-ros cargo, LNG carriers] The system is not able to cope with the cargo determination parameters required for the various ship types. The monitoring per voyage and the annual emissions report should be customized on a ship type basis in order to reflect the unit used for cargo and transport work. [Reg. 2016/1928]
B3	The system includes a limited number of coherency checks and users would benefit from more extensive checks on fuel consumption, time at sea, distance sailed, cargo on-board and transport work. [Reg 2016/1927, Table E3]
B4	
B5	
B6	
B7	
B8	
B9	

C. Prior certification Non-compliances that have NOT been resolved.

Any prior year Non-compliances reported in the previous Certification Report that have been resolved do not need to be listed here.

C1	NOT APPLICABLE.
C2	
C3	
C4	
C5	

**Certification Report - Shipping Fuel & Emissions Regulation (EU MRV and IMO DCS)
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DANAOS Management Consultant SA

Annex 2 - Further information of relevance to the Opinion

Objectives and scope of the Certification: To certify that the EU MRV IT system complies with the Regulation (EU) N° 2015/757.

Work performed & basis of the opinion: We conducted our examination having regard to the certification criteria reference documents outlined below. This involved examining evidence and testing the system to give us assurance that the system has been properly developed in accordance with the relevant Regulations and standards.

Reference documents cited :	<ol style="list-style-type: none">1) 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/EC2) Implementing and Delegated Acts pursuant to REGULATION (EU) 2015/757 :<ul style="list-style-type: none">- Commission Delegated Regulation (EU) 2016/2071 of 26 September 2016 amending Regulation (EU) 2015/757 as regards the methods for monitoring carbon dioxide emissions and the rules for monitoring other relevant information- Commission Implementing Regulation (EU) 2016/1927 of 4 November 2016 on templates for monitoring plans, emissions reports and documents of compliance- Commission Implementing Regulation (EU) 2016/1928 of 4 November 2016 on determination of cargo carried for categories of ships other than passenger, ro-ro and container ships3) ISO 17067 Conformity assessment – Requirements for bodies certifying products, processes and services4) ISO 14065:2013 Greenhouse gases. Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition5) ISO/IEC 25051:2014 - Software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- Requirements for quality of Ready to Use Software Product (RUSP) and instructions for testing6) Resolution MECP.282(70) 2016 Development of a SEEMP - Data Collection Plan requirements - Appendix 2 - Sample form of ship fuel oil consumption data collection plan (Part II of the SEEMP)7) Resolution MECP.282(70) 2016 Development of a SEEMP - Reporting requirements for fuel, time, and distance as per8) MARPOL Annex VI Reg. 22A Appendix IX - Reporting Requirements and9) Resolution MECP.282(70) 2016 Development of a SEEMP - Appendix 3 : Standardized data reporting format for the data collection system10) Reporting requirements as per Resolution MECP.291(71) 2017 Guidelines for Administration verification of data - Appendix 1 'Sample of the BDN summaries'
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**Verification Opinion - Shipping Fuel & Emissions Regulation (EU MRV and IMO DCS)
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Annex 3 - Terms and conditions

A) Applicant's Responsibility

1	It is the applicant's responsibility to ensure that the system is supplied is in strict conformity with the corresponding VERIFAVIA Certificate.
2	The applicant is responsible for recording any change in the system in software release documentation which must be forwarded to VERIFAVIA for evaluation and approval on request. Major changes should be approved by VERIFAVIA before being deployed in the software.
3	The applicant shall only make reference to VERIFAVIA, VERIFAVIA Logo or Mark, or VERIFAVIA's name in advertising or otherwise, for systems that have been certified by VERIFAVIA.
4	The applicant must not mislead purchasers by claiming performance not covered by the certification.
5	The applicant shall maintain a record of all complaints and any remedial action relative to the certified system. Such records must be available for VERIFAVIA's review on request.
6	When promoting the system, the applicant shall not imply that the verification would be simpler, easier, faster or less expensive if VERIFAVIA or any other verification body is used for the verification of the carbon emissions report of the system's user.

B) Declaration

1	VERIFAVIA undertakes to make available for download in its website a copy of the certificate and to include a description of the general nature of the work undertaken for the applicant.
2	VERIFAVIA undertakes to maintain records of relevant documentation, such as test reports, for the duration of the Certification (i.e. while certification remains valid).
3	VERIFAVIA undertakes to protect the confidentiality of information received in the course of its services.
4	Any complaint to VERIFAVIA made with respect to VERIFAVIA Certification may be referred to VERIFAVIA's CEO, who may direct a special examination to be held according to VERIFAVIA's Complaints and Appeals procedure.
5	The interpretation of these procedures is the sole responsibility, and the sole discretion, of VERIFAVIA.
6	The applicant shall maintain a record of all complaints and any remedial action relative to the certified system. Such records must be available for VERIFAVIA's review on request.

C) Use of the Logos and Marks

1	When a VERIFAVIA certificate has been issued and whilst it remains valid, the applicant is authorised to use a VERIFAVIA Logo or Mark under the terms and conditions agreed at the time of approval. This Logo or Mark may be used by the applicant on any packaging for the system, promotional material or to the system itself.
2	The applicant hereby agrees that VERIFAVIA may identify the applicant and system by name and logo and the general nature of the work undertaken for the applicant in the VERIFAVIA marketing literature, press releases and website.

D) Renewal, Cancellation or Withdrawal of Certificates

1	Certificate is valid for one year from the date of issuance.
2	Application should be submitted to VERIFAVIA at least one month prior to the existing certificate expiry date. No additional documentation is required if the system and specified standards are unchanged. If any of these aspects will be changed prior to the expiry date, as required by the VERIFAVIA terms and conditions, VERIFAVIA must be informed. Depending on the changes made, the same process may need to be followed as for the original certificate.
3	VERIFAVIA reserves the right to cancel a Certificate if: <ul style="list-style-type: none">• Any design changes are made to a certified system which is deemed to adversely affect the descriptive or performance provisions under which VERIFAVIA Certificate was granted.• Any feature of a certified system is found to be unsatisfactory in service.• Improper use is made of the Certificate, or the VERIFAVIA Logo or Mark, or of VERIFAVIA's name, in marketing the system.• Settlement of fees for VERIFAVIA's services associated with the certification is not completed.• Periodical Quality Assurance audits have not taken place.
4	VERIFAVIA will withdraw a Certificate if: <ul style="list-style-type: none">• The client does not wish to renew the certification.• The system is no longer produced.• The specific relationship between a developer producing a system under licence and the licensor no longer applies.
5	If VERIFAVIA considers that a Certificate should be cancelled or withdrawn, the client will be informed in writing and given the opportunity to take appropriate corrective action, or give notice of appeal.
6	VERIFAVIA reserves the right to publish details of cancelled or withdrawn certificates, together with reasons, if considered necessary.

D) Disclaimer

1	VERIFAVIA, its subsidiaries and affiliates and their respective officers, employees or agents are, individually and collectively, referred to in this document as 'VERIFAVIA'.
2	VERIFAVIA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant VERIFAVIA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.
3	Full responsibility for the correct use of the certified system rests with the final user. Appropriate training should be conducted to ensure that the responsible person(s) in charge of monitoring, reporting or controlling data using the certified system know how to use in a way that is conform to the certification delivered.