

Rules for the Certification of Service Suppliers

Effective from 1 January 2022

GENERAL CONDITIONS

Definitions:

“Administration” means the Government of the State whose flag the Ship is entitled to fly or under whose authority the Ship is authorised to operate in the specific case.

“IACS” means the International Association of Classification Societies.

“Interested Party” means the party, other than the Society, having an interest in or responsibility for the Ship, product, plant or system subject to classification or certification (such as the owner of the Ship and his representatives, the ship builder, the engine builder or the supplier of parts to be tested) who requests the Services or on whose behalf the Services are requested.

“Owner” means the registered owner, the ship owner, the manager or any other party with the responsibility, legally or contractually, to keep the ship seaworthy or in service, having particular regard to the provisions relating to the maintenance of class laid down in Part A, Chapter 2 of the Rules for the Classification of Ships or in the corresponding rules indicated in the specific Rules.

“Rules” in these General Conditions means the documents below issued by the Society:

- (i) Rules for the Classification of Ships or other special units;
- (ii) Complementary Rules containing the requirements for product, plant, system and other certification or containing the requirements for the assignment of additional class notations;
- (iii) Rules for the application of statutory rules, containing the rules to perform the duties delegated by Administrations;
- (iv) Guides to carry out particular activities connected with Services;
- (v) Any other technical document, as for example rule variations or interpretations.

“Services” means the activities described in Article 1 below, rendered by the Society upon request made by or on behalf of the Interested Party.

“Ship” means ships, boats, craft and other special units, as for example offshore structures, floating units and underwater craft.

“Society” or “TASNEEF” means Tasneef and/or all the companies in the Tasneef Group which provide the Services.

“Surveyor” means technical staff acting on behalf of the Society in performing the Services.

Article 1

1.1. The purpose of the Society is, among others, the classification and certification of ships and the certification of their parts and components. In particular, the Society:

- (i) sets forth and develops Rules;
- (ii) publishes the Register of Ships;
- (iii) issues certificates, statements and reports based on its survey activities.

1.2. The Society also takes part in the implementation of national and international rules and standards as delegated by various Governments.

1.3. The Society carries out technical assistance activities on request and provides special services outside the scope of classification, which are regulated by these general conditions, unless expressly excluded in the particular contract.

Article 2

2.1. The Rules developed by the Society reflect the level of its technical knowledge at the time they are published. Therefore, the Society, although committed also through its research and development services to continuous updating of the Rules, does not guarantee the Rules meet state-of-the-art science and technology at the time of publication or that they meet the Society's or others' subsequent technical developments.

2.2. The Interested Party is required to know the Rules on the basis of which the Services are provided. With particular reference to Classification Services, special attention is to be given to the Rules concerning class suspension, withdrawal and reinstatement. In case of doubt or inaccuracy, the Interested Party is to promptly contact the Society for clarification.

The Rules for Classification of Ships are published on the Society's website: www.tasneef.ae.

2.3. The Society exercises due care and skill:

- (i) in the selection of its Surveyors
- (ii) in the performance of its Services, taking into account the level of its technical knowledge at the time the Services are performed.

2.4. Surveys conducted by the Society include, but are not limited to, visual inspection and non-destructive testing. Unless otherwise required, surveys are conducted through sampling techniques and do not consist of comprehensive verification or monitoring of the Ship or of the items subject to certification. The surveys and checks made by the Society on board ship do not necessarily require the constant and continuous presence of the Surveyor. The Society may also commission laboratory testing, underwater inspection and other checks carried out by and under the responsibility of qualified service suppliers. Survey practices and procedures are selected by the Society based on its experience and knowledge and according to generally accepted technical standards in the sector.

Article 3

3.1. The class assigned to a Ship, like the reports, statements, certificates or any other document or information issued by the Society, reflects the opinion of the Society concerning compliance, at the time the Service is provided, of the Ship or product subject to certification, with the applicable Rules (given the intended use and within the relevant time frame).

The Society is under no obligation to make statements or provide information about elements or facts which are not part of the specific scope of the Service requested by the Interested Party or on its behalf.

3.2. No report, statement, notation on a plan, review, Certificate of Classification, document or information issued or given as part of the Services provided by the Society shall have any legal effect or implication other than a representation that, on the basis of the checks made by the Society, the Ship, structure, materials, equipment, machinery or any other item covered by such document or information meet the Rules. Any such document is issued solely for the use of the Society, its committees and clients or other duly authorised bodies and for no other purpose. Therefore, the Society cannot be held liable for any act made or document issued by other parties on the basis of the statements or information given by the Society. The validity, application, meaning and interpretation of a Certificate of Classification, or any other document or information issued by the Society in connection with its Services, is governed by the Rules of the Society, which is the sole subject entitled to make such interpretation. Any disagreement on technical matters between the Interested Party and the Surveyor in the carrying out of his functions shall be raised in writing as soon as possible with the Society, which will settle any divergence of opinion or dispute.

3.3. The classification of a Ship, or the issuance of a certificate or other document connected with classification or certification and in general with the performance of Services by the Society shall have the validity conferred upon it by the Rules of the Society at the time of the assignment of class or issuance of the certificate; in no case shall it amount to a statement or warranty of seaworthiness,

structural integrity, quality or fitness for a particular purpose or service of any Ship, structure, material, equipment or machinery inspected or tested by the Society.

3.4. Any document issued by the Society in relation to its activities reflects the condition of the Ship or the subject of certification or other activity at the time of the check.

3.5. The Rules, surveys and activities performed by the Society, reports, certificates and other documents issued by the Society are in no way intended to replace the duties and responsibilities of other parties such as Governments, designers, ship builders, manufacturers, repairers, suppliers, contractors or sub-contractors, Owners, operators, charterers, underwriters, sellers or intended buyers of a Ship or other product or system surveyed.

These documents and activities do not relieve such parties from any fulfilment, warranty, responsibility, duty or obligation (also of a contractual nature) expressed or implied or in any case incumbent on them, nor do they confer on such parties any right, claim or cause of action against the Society. With particular regard to the duties of the ship Owner, the Services undertaken by the Society do not relieve the Owner of his duty to ensure proper maintenance of the Ship and ensure seaworthiness at all times. Likewise, the Rules, surveys performed, reports, certificates and other documents issued by the Society are intended neither to guarantee the buyers of the Ship, its components or any other surveyed or certified item, nor to relieve the seller of the duties arising out of the law or the contract, regarding the quality, commercial value or characteristics of the item which is the subject of transaction.

In no case, therefore, shall the Society assume the obligations incumbent upon the above-mentioned parties, even when it is consulted in connection with matters not covered by its Rules or other documents.

In consideration of the above, the Interested Party undertakes to relieve and hold harmless the Society from any third party claim, as well as from any liability in relation to the latter concerning the Services rendered.

Insofar as they are not expressly provided for in these General Conditions, the duties and responsibilities of the Owner and Interested Parties with respect to the services rendered by the Society are described in the Rules applicable to the specific Service rendered.

Article 4

4.1. Any request for the Society's Services shall be submitted in writing and signed by or on behalf of the Interested Party. Such a request will be considered irrevocable as soon as received by the Society and shall entail acceptance by the applicant of all relevant requirements of the Rules, including these General Conditions. Upon acceptance of the written request by the Society, a contract between the Society and the Interested Party is entered into, which is regulated by the present General Conditions.

4.2. In consideration of the Services rendered by the Society, the Interested Party and the person requesting the service shall be jointly liable for the payment of the relevant fees, even if the service is not concluded for any cause not pertaining to the Society. In the latter case, the Society shall not be held liable for non-fulfilment or partial fulfilment of the Services requested. In the event of late payment, interest at the legal current rate increased by 1.5% may be demanded.

4.3. The contract for the classification of a Ship or for other Services may be terminated and any certificates revoked at the request of one of the parties, subject to at least 30 days' notice to be given in writing. Failure to pay, even in part, the fees due for Services carried out by the Society will entitle the Society to immediately terminate the contract and suspend the Services.

For every termination of the contract, the fees for the activities performed until the time of the termination shall be owed to the Society as well as the expenses incurred in view of activities already programmed; this is without prejudice to the right to compensation due to the Society as a consequence of the termination.

With particular reference to Ship classification and certification, unless decided otherwise by the Society, termination of the contract implies that the assignment of class to a Ship is withheld or, if already assigned, that it is suspended or withdrawn; any statutory certificates issued by the Society will be withdrawn in those cases where provided for by agreements between the Society and the flag State.

Article 5

5.1. In providing the Services, as well as other correlated information or advice, the Society, its Surveyors, servants or agents operate with due diligence for the proper execution of the activity. However, considering the nature of the activities performed (see art. 2.4), it is not possible to guarantee absolute accuracy, correctness and completeness of any information or advice supplied. Express and implied warranties are specifically disclaimed.

Therefore, except as provided for in paragraph 5.2 below, and also in the case of activities carried out by delegation of Governments, neither the Society nor any of its Surveyors will be liable for any loss, damage or expense of whatever nature sustained by any person, in tort or in contract, derived from carrying out the Services.

5.2. Notwithstanding the provisions in paragraph 5.1 above, should any user of the Society's Services prove that he has suffered a loss or damage due to any negligent act or omission of the Society, its Surveyors, servants or agents, then the Society will pay compensation to such person for his proved loss, up to, but not exceeding, five times the amount of the fees charged for the specific services, information or opinions from which the loss or damage derives or, if no fee has been charged, a maximum of AED5,000 (Arab Emirates Dirhams Five Thousand only). Where the fees charged are related to a number of Services, the amount of the fees will be apportioned for the purpose of the calculation of the maximum compensation, by reference to the estimated time involved in the performance of the Service from which the damage or loss derives. Any liability for indirect or consequential loss, damage or expense is specifically excluded. In any case, irrespective of the amount of the fees charged, the maximum damages payable by the Society will not be more than AED5,000,000 (Arab Emirates Dirhams Five Millions only). Payment of compensation under this paragraph will not entail any admission of responsibility and/or liability by the Society and will be made without prejudice to the disclaimer clause contained in paragraph 5.1 above.

5.3. Any claim for loss or damage of whatever nature by virtue of the provisions set forth herein shall be made to the Society in writing, within the shorter of the following periods: (i) THREE (3) MONTHS from the date on which the Services were performed, or (ii) THREE (3) MONTHS from the date on which the damage was discovered. Failure to comply with the above deadline will constitute an absolute bar to the pursuit of such a claim against the Society.

Article 6

6.1. These General Conditions shall be governed by and construed in accordance with United Arab Emirates (UAE) law, and any dispute arising from or in connection with the Rules or with the Services of the Society, including any issues concerning responsibility, liability or limitations of liability of the Society, shall be determined in accordance with UAE law. The courts of the Dubai International Financial Centre (DIFC) shall have exclusive jurisdiction in relation to any claim or dispute which may arise out of or in connection with the Rules or with the Services of the Society.

6.2. However,

- (i) In cases where neither the claim nor any counterclaim exceeds the sum of AED300,000 (Arab Emirates Dirhams Three Hundred Thousand) the dispute shall be referred to the jurisdiction of the DIFC Small Claims Tribunal; and
- (ii) for disputes concerning non-payment of the fees and/or expenses due to the Society for services, the Society shall have the

right to submit any claim to the jurisdiction of the Courts of the place where the registered or operating office of the Interested Party or of the applicant who requested the Service is located.

In the case of actions taken against the Society by a third party before a public Court, the Society shall also have the right to summon the Interested Party or the subject who requested the Service before that Court, in order to be relieved and held harmless according to art. 3.5 above.

Article 7

7.1. All plans, specifications, documents and information provided by, issued by, or made known to the Society, in connection with the performance of its Services, will be treated as confidential and will not be made available to any other party other than the Owner without authorisation of the Interested Party, except as provided for or required by any applicable international, European or domestic legislation, Charter or other IACS resolutions, or order from a competent authority. Information about the status and validity of class and statutory certificates, including transfers, changes, suspensions, withdrawals of class, recommendations/conditions of class, operating conditions or restrictions issued against classed ships and other related information, as may be required, may be published on the website or released by other means, without the prior consent of the Interested Party.

Information about the status and validity of other certificates and statements may also be published on the website or released by other means, without the prior consent of the Interested Party.

7.2. Notwithstanding the general duty of confidentiality owed by the Society to its clients in clause 7.1 above, the Society's clients hereby accept that the Society may participate in the IACS Early Warning System which requires each Classification Society to provide other involved Classification Societies with relevant technical information on serious hull structural and engineering systems failures, as defined in the IACS Early Warning System (but not including any drawings relating to the ship which may be the specific property of another party), to enable such useful information to be shared and used to facilitate the proper working of the IACS Early Warning System. The Society will provide its clients with written details of such information sent to the involved Classification Societies.

7.3. In the event of transfer of class, addition of a second class or withdrawal from a double/dual class, the Interested Party undertakes to provide or to permit the Society to provide the other Classification Society with all building plans and drawings, certificates, documents and information relevant to the classed unit, including its history file, as the other Classification Society may require for the purpose of classification in compliance with the applicable legislation and relative IACS Procedure. It is the Owner's duty to ensure that, whenever required, the consent of the builder is obtained with regard to the provision of plans and drawings to the new Society, either by way of appropriate stipulation in the building contract or by other agreement.

In the event that the ownership of the ship, product or system subject to certification is transferred to a new subject, the latter shall have the right to access all pertinent drawings, specifications, documents or information issued by the Society or which has come to the knowledge of the Society while carrying out its Services, even if related to a period prior to transfer of ownership.

Article 8

8.1. Should any part of these General Conditions be declared invalid, this will not affect the validity of the remaining provisions.

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1 GENERAL

These Rules set the minimum requirements for approval and certification of firms providing services such as measurements, tests or maintenance of safety systems and equipment and is applicable to both initial and renewal audits.

1.1 Definitions

- **Manufacturer:** A company that manufactures equipment required to be periodically serviced and/or maintained.

- **Service Supplier:** A person or company, not employed by an IACS Member, who at the request of an equipment manufacturer, shipyard, vessel's owner or other client acts in connection with inspection work and provides services for a ship or a mobile offshore unit such as measurements, tests or maintenance of safety systems and equipment, the results of which are used by surveyors in making decisions affecting classification or statutory certification and services.

- **Agent:** A Person or Company authorised to act for or to represent a Manufacturer or approved/recognized service supplier.

- **Subsidiary:** A Company partly or wholly owned by a Manufacturer or approved/recognized service supplier.

- **Subcontractor:** A Person or Company providing services to a Manufacturer or recognized service supplier, with a formal contract defining the assumption of the obligations of the service supplier.

1.2 Application

These Rules apply to the approval of the following categories of service suppliers:

a) Statutory services

- 1) Firms engaged in servicing inflatable liferafts, inflatable lifejackets, hydrostatic release units, inflatable rescue boats, marine evacuation systems;
- 2) Firms engaged in inspections and testing of radio communication equipment;
- 3) Firms engaged in inspections and maintenance of self contained breathing apparatus;
- 4) Firms engaged in annual performance testing of Voyage Data Recorders (VDR) and simplified Voyage Data Recorders (S-VDR);
- 5) Firms engaged in sound pressure level measurements of public address and general alarm systems on board ships;
- 6) Firms engaged in inspections of low location lighting systems using photo luminescent materials and evacuation guidance systems used as an alternative to low-location lighting systems;
- 7) Firms engaged in maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear;
- 8) Firms engaged in inspection, performance testing and maintenance of Automatic Identification Systems (AIS);

- 9) Firms engaged in Commissioning Testing of Ballast Water Management System (BWMS).
- b) Classification and/or Statutory services:
 - 1) Firms engaged in thickness measurements on ships or mobile offshore units except:
 - non-ESP ships less than 500 gross tonnage and
 - all fishing vessels;
 - 2) Firms carrying out an in-water survey on ships and mobile offshore units by diver or Remotely Operated Vehicle (ROV);
 - 3) Firms engaged in inspections and maintenance of fire extinguishing equipment and systems;
 - 4) Firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment;
 - 5) Firms engaged in measurements of noise level on board ships;
 - 6) Firms engaged in examination of Ro-Ro ship's bow, stern, side and inner doors;
 - 7) Firms engaged in testing of coating systems in accordance with IMO Resolution MSC.215(82), as amended, and IACS UI SC223 and/or MSC.288(87), as amended;
 - 8) Firms engaged in tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for vessels in service;
 - 9) Firms engaged in survey using Remote Inspection Techniques (RIT) as an alternative means for Close-up Survey of the structure of ships and mobile offshore units.
 - 10) Firms engaged in Cable Transit Seal Systems inspection on ships and Mobile Offshore Units.

Where Tasneef accepts work of a third party (eg., service supplier) approved by itself, Tasneef is to verify the performance of such services. For statutory service, the flag State may increase the scope of verification to be applied to these services.

Where the results of the following service providers are used by Surveyor in making decisions affecting classification services then that service provider is to be approved and verified by Tasneef:

- 1) Firms engaged in thickness measurements on ships or mobile offshore units except:
 - non-ESP ships less than 500 gross tonnage and
 - all fishing vessels;
- 2) Firms carrying out an in-water survey on ships and mobile offshore units by diver or Remotely Operated Vehicle (ROV);
- 3) Firms engaged in tightness testing of closing appliances such as hatches, doors etc. with ultrasonic equipment;
- 4) Firms engaged in survey using Remote Inspection Techniques (RIT) as an alternative means for Close-up Survey of the structure of ships and mobile offshore units.

Where such services are used by Tasneef Surveyors in making decisions affecting statutory certification and service, the firms are subject to approval and verification by Tasneef where Tasneef is so authorised by the

relevant flag Administration (i.e. the flag of the ship on which the servicing is to be done or the service equipment is to be used). For such services Tasneef may accept approvals done by:

- a) the flag Administration itself,
- b) duly authorized organizations acting on behalf of the flag Administration, or
- c) other organizations acceptable to the flag Administration (e.g. other governments, etc.).

Use of the approved service suppliers is not mandatory for the following services, unless instructed otherwise by the flag Administration with respect to statutory certification:

- a) Firms engaged in inspections of low location lighting systems using photo luminescent materials and evacuation guidance systems used as an alternative to low-location lighting systems;
- b) Firms engaged in sound pressure level measurements of public address and general alarm systems on board ships;
- c) Firms engaged in measurements of noise level onboard ships;
- d) Firms engaged in testing of coating systems in accordance with IMO Resolution MSC.215(82) as amended and IACS UI SC223 and/or MSC.288(87) as amended;
- e) Firms engaged in examination of Ro-Ro ships bow, stern, side and inner doors.

1.3 Equivalence with other standards

In general, the application of these Rules is in compliance with the requirements of IACS Unified Requirement Z17 "Procedural requirements for service suppliers" and of IACS Procedural Requirements No. 23 "Procedures for reporting information on the approval of thickness measurements firms".

1.4 Voluntary certification

Suppliers of services other than those listed in [1.2] need not be certified by Tasneef or by the ship's flag Administration. However, such firms may request Tasneef to certify them as Service Suppliers on a voluntary basis.

1.5 Specific requirements for particular services

These Rules include general requirements applicable to all categories of service suppliers: firms for which the certification is mandatory, and firms that request the certification on a voluntary basis. Additional specific requirements for the firms listed in [1.2], including national and/or international requirements, may be found from Appendix A to Appendix Q.

Additional requirements for certification on voluntary basis of firms engaged in testing cyber resilience of ships, may be found in Annex 1.

1.6 Abbreviations

Hereafter the Firms supplying services are referred to as "suppliers".

2 PROCEDURES FOR APPROVAL AND CERTIFICATION

2.1 Application and documentation

For approval, the company has to submit an application to Tasneef, specifying the categories for which approval is required and enclosing:

- 1) outline of company, e.g. organisation and management structure, including subsidiaries to be included in the approval/certification;
- 2) list of nominated agents, subsidiaries and subcontractors;
- 3) experience of the company in the specific service area;
- 4) for categories of Service Suppliers that require certification from manufacturers, manufacturer's documentary evidence that the Service Supplier has been certified or licensed to service the particular makes and models of equipment for which approval is sought shall be provided;
- 5) list of operators, technicians and inspectors documenting training and experience within the relevant service area, and qualifications according to recognised national, international or industry standards, as relevant;
- 6) description of equipment used for the particular service for which approval is sought;
- 7) guide for operators of such equipment;
- 8) training programmes for operators, technicians and inspectors;
- 9) checklists and record formats for recording results of the services carried out;
- 10) Quality Manual and/or documented procedures used for assuring the quality of the services (see [4.5]);
- 11) documented procedures for communication with the crew prior to commencing work, so that it is safe to decommission the equipment being maintained, and to provide a safe system of work in place;
- 12) evidence of approval/acceptance by other bodies, if any;
- 13) information on any other activities which may present a conflict of interest;
- 14) record of customer claims and of corrective actions requested by certification bodies;
- 15) Operators/technicians/inspectors documentation they have acknowledged the code of conduct.

2.2 General requirements

2.2.1 Extent of approval

The supplier is to demonstrate, as required by [2.2.2] to [2.2.9], that he has the competence and control needed to perform the services for which approval is sought

2.2.2 Training of personnel

The supplier is responsible for the qualification and training of its personnel to a recognised national, international or industry standard as applicable. Where

such standards do not exist, the supplier is to define standards for the training and qualification of its personnel relevant to the functions they are authorised to perform.

The personnel are also to have adequate experience and be familiar with the operation of any necessary equipment.

Operators/technicians/inspectors are to have had a minimum of one year tutored on-the-job training.

Where it is not possible to perform internal training, a program of external training may be considered acceptable.

2.2.3 Supervision

The supplier is to provide supervision for all services provided. The supervisor responsible is to have had a minimum of two years of experience as an operator/technician/ inspector in the activity for which the supplier is approved.

For a supplier consisting of one person, that person is to meet the requirements of a supervisor.

2.2.4 Personnel records

The supplier is to keep records of the approved operators, technicians and inspectors. The record is to contain information on age, formal education, training and experience in the services for which they are approved.

2.2.5 Equipment and facilities

The supplier is to have the necessary equipment and facilities for the service to be supplied. A record of the equipment used is to be kept and available. The record is to contain information on maintenance and results of calibration and verifications. Tasneef is to assess and record the validity of previous measuring results when the equipment is found not to conform to requirements. Tasneef is to take appropriate action on the equipment affected.

2.2.6 Control of data

When computers are used for the acquisition, processing, recording, reporting, storage, measurement assessment and monitoring of data, the ability of computer software to satisfy the intended application is to be documented and confirmed by the service supplier. This is to be undertaken prior to initial use and reconfirmed as necessary.

Note 1: Commercial off-the-shelf software (e.g. wordprocessing, database and statistical programmes) in general use within their designed application range may be considered to be sufficiently validated and do not require any subsequent confirmation.

2.2.7 Where several servicing stations are owned by a given company, each station is to be assessed and approved except as specified in [2.5.3].

2.2.8 Procedures

The supplier is to have documented work procedures covering all services supplied.

2.2.9 Subcontractors

The supplier is to give information of agreements and arrangements if any parts of the services provided are subcontracted. Particular emphasis is to be given to quality management by the supplier in following-up of such subcontracts.

Subcontractors providing the services of the approved service supplier are also to meet the requirements in [2].

2.2.10 Verification

The supplier is to verify that the services provided (including those supplied by subcontractors) are carried out in accordance with approved procedures.

2.2.11 Reporting

The report is to be prepared in a form agreed with Tasneef. The report should detail the results of inspections, measurements, tests, maintenance and/or repairs carried out. Further instructions may be given in Appendixes. The report is to include a Copy of the Certificate of Approval.

Documented procedures and instructions are to be available for the recording of damages and defects found during inspection, servicing and repair work. This documentation is to be made available upon request.

2.3 Auditing of the supplier

Subject to the satisfactory outcome of the review of the documents submitted, the supplier is audited in order to ascertain that it is duly organised and managed in accordance with the submitted documents, and that it is capable of conducting the services for which approval/certification is sought.

2.4 Service performance

Certification is conditional on a practical demonstration of the performance of the specific service as well as satisfactory reporting being carried out. This performance may be demonstrated during the supply of an actual service or by a simulated service, provided the simulation is fully representative of an actual service.

At renewal audits, evidence of performance, verified by class surveyor, since the previous audit is sufficient to satisfy this requirement.

2.5 Quality System

2.5.1 The supplier is to have a documented system covering at least the following:

- 1) code of conduct of the relevant activity;
- 2) maintenance and calibration of equipment;
- 3) training programmes for operators/ technicians/ inspectors;
- 4) supervision and verification of operations to ensure compliance with the approved operational procedures;
- 5) recording and reporting of information;

- 6) quality management of subsidiaries, agents and subcontractors;
- 7) job preparation;
- 8) periodical review of work process procedures, complaints, corrective actions, and issuance, maintenance and control of documents.

2.5.2 A documented Quality system complying with the most current version of ISO 9000 Series and including the above items, would be considered acceptable.

2.5.3 If a manufacturer of equipment (and/or its service supplier) applies for inclusion of its nominated agents and/or subsidiaries (excluding any subcontractor), in the approval, then it is to have implemented a quality system certified in accordance with the most current version of ISO 9000 series. The quality system is to contain effective controls of the manufacturer's (and/or service supplier's) agents and/or subsidiaries. The nominated agents/subsidiaries also are to have in place an equally effective quality system complying with the most current version of ISO 9000 series. Such approvals are to be based upon an evaluation of the quality system implemented by the parent company against the most current version of ISO 9000 series. Tasneef may require follow-up audits on such agents or subsidiaries against the most current version of ISO 9000 series to confirm adherence to this quality system.

2.6 Suppliers relations with equipment manufacturers

2.6.1 Suppliers working as service station for a manufacturer

A supplier which works as a service station for manufacturer(s) of equipment (and as a service supplier in this field) is to be assessed by the manufacturer(s) and nominated as their agent.

The manufacturer is to ensure that appropriate instruction manuals, materials etc. are available for the agent and that the agent's technicians are properly trained.

Such suppliers are to be approved either on a case-by-case basis, or in accordance with [2.5.3].

3 CERTIFICATION

3.1 Issuance of the certificate

Upon satisfactory completion of both the audit of the supplier and the demonstration test, as applicable, Tasneef may issue a Certificate of Approval stating that the supplier's service operation system has been found to be satisfactory and that the results of services performed in accordance with that system may be accepted and utilised by the Society's Surveyors in making decisions affecting classification or statutory certification, as relevant.

The Certificate is to clearly state the type and scope of services and any limitations or restrictions imposed, including type of equipment and/or names of Manufacturers of equipment where this is a limiting restraint.

The supplier may also be included in Tasneef record of approved service suppliers.

3.2 Validity and renewal of the certificates

The Certificate is to be renewed at intervals of three years by verification through an audit similar to the approval one that the approved original conditions are maintained or, where applicable, on expiry of the supplier's approval received from an equipment Manufacturer, whichever comes first. In the latter case, Tasneef is to be informed in due course by the Service Supplier.

The certificate validity is subject to the satisfactory results of unscheduled audits and/or of other type of monitoring, such as the check of a supplied service after its completion.

The renewal audits are to be performed before the expiring date of the certificate.

Prolongation of the validity of the certificates beyond the expiring date is not allowed.

3.3 SUPPLIERS ENGAGED IN VARIOUS CATEGORIES OF SERVICES

Where the same Supplier applies for more than one service, the audits relative to the various services may be performed at the same time. In general, for these Suppliers only one certificate listing all certified services is issued. However, at the Supplier's request, individual certificates, each one covering a specific service, may be issued.

3.4 MEANING OF THE CERTIFICATION

The certification process of a Supplier from Tasneef is to be considered as a preliminary verification that the Supplier has the capability and facilities to supply adequate services.

4 SUPPLIER'S OBLIGATIONS

When any alteration to the certified service operating system of the supplier is made, Tasneef is to be immediately notified of this. In such case, a re-audit may be required when deemed necessary by Tasneef.

5 SUSPENSION AND CANCELLATION OF APPROVAL

5.1 Services improperly carried out

Where evidence is given that services were improperly carried out or the results were improperly reported, Tasneef reserves the right to carry out additional verifications at the Supplier and to take appropriate actions such as the suspension or in case of wilful acts or omissions the cancellation of the certificate as specified in [5.2] and [5.3].

5.2 Suspension of the approval

Approval may be suspended in the following cases:

- 1) where the service was improperly carried out or the results were improperly reported; in particular in case of Firms engaged in thickness measurements the certificate may be suspended if the reports have been delivered with delay to Tasneef or Tasneef forms and programmes have not been used for the reporting;
- 2) where deficiencies are found in the approval service operating system of the supplier;
- 3) where alterations have been made to the Company's Quality System relevant to the service supplier certificates, without written notification to Tasneef;
- 4) where a required periodical audit has not been carried out as requested;
- 5) where the due -fees have not been paid.

5.3 Cancellation of the approval

Approval may be cancelled in the following cases:

- 1) in the same cases as in [5.1] above, where major serious deficiencies are found;
- 2) in the same cases as in [5.1] above, where the Supplier does not implement the corrective actions to the found deficiencies in the time agreed with Tasneef;
- 3) where wilful acts or omissions are ascertained
- 4) where any deliberate misrepresentation has been made by the Supplier.

5.4 Suppliers with certificates suspended, cancelled or expired

Suppliers whose approval certificates were cancelled or expired are to be considered as not certified.

Suppliers whose approval certificates were suspended are to be considered as not certified for all the period of suspension of the certificate. Such suppliers can be used again as soon as the reason for the suspension have been removed.

5.5 Transparency

In case of cancellation or suspension of the certification Tasneef reserves the right to inform the IACS Members accordingly.

In case of Firms engaged in thickness measurements whose certificates have been cancelled for cause, IACS PR23 is to be followed.

5.6 Reintegration of certificates suspended or cancelled

A certificate suspended in the cases (1), (2) and (3) as specified in [5.2] may be reintegrated after an audit or documental verification, to Tasneef satisfaction, in order to ascertain that the reason of suspension have been removed.

A certificate suspended in the cases (4) and (5) as

specified in [5.2] is automatically reintegrated as soon as the deficiency has been corrected.

A Supplier whose approval was cancelled may apply for re-approval only after it has corrected the non-conformities which resulted in cancellation, and it can assure the full control of the service operating system.

Expiration or cancellation of the Supplier's parent company approval automatically invalidates approval of all agents and subsidiaries if these are certified according to [2.5.3].

A new certificate will be issued by Tasneef only after a satisfactory verification of the corrective actions implemented, during an audit at the Suppliers equivalent to the one for the first approval.

A new certificate cannot be granted to a Supplier whose approval has been cancelled due to violation of code of ethics [2.5] (1) or wilful acts or omissions [5.3] (3).

5.7 Additional periodical verifications

In the case a new certificate is granted to a Supplier whose certificate was cancelled, Tasneef reserves the right to perform additional verifications and checks for the period of the validity of the new certificate issued after the cancellation, as for instance scheduled or unscheduled audits or verifications of the services already supplied.

Appendix A - Firms engaged in thickness measurements on ships or mobile offshore units

A.1 EXTENT OF ENGAGEMENT

This Appendix contains additional specific requirements for the issue of the Qualification Certificate to firms engaged, with their own qualified operators, in ultrasonic (US) thickness measurements of structural material of ships or mobile offshore units, including those with the notation **ESP** (Enhanced Survey Programme) (see Part A of the Rules for the classification of ships).

A.2 QUALIFICATION REQUIREMENTS

A.2.1

The firm requesting the qualification certificate is to demonstrate proven experience in the field of thickness measurement, in particular with regard to hull structures.

A.2.2

In particular, the supplier is to:

- (1) have a program for the theoretical and practical training of operators;
- (2) have a responsible supervisor qualified according to a recognised national or international industrial standard (e.g. EN 473 level II as amended or ISO 9712 level II as amended);
- (3) have a sufficient number of suitably qualified operators available for Non-Destructive Tests (NDT); they are to be qualified according to a recognised national or international industrial standard (e.g. EN 473 level I as amended or ISO 9712 level I as amended);
- (4) have the necessary equipment;
- (5) have instructions for personnel, written operating procedures and the report forms relevant to the activity involved;
- (6) have updated records of the equipment employed, as well as the maintenance and calibration procedures for such equipment.

A.2.3

The NDT operators employed by the firm are to have sufficient basic knowledge of hull structures and of Tasneef requirements regulating the checks and measurements they are asked to perform.

The firm is to have in operation a written procedure for qualifying NDT operators for the specific application, in addition to that for general NDT qualification.

A.2.4

The suitability of US operators for thickness measurement is also to be verified for the following conditions of the materials, as requested by Tasneef:

- (a) both flat and curved surfaces;
- (b) corroded surfaces both on the side where the probe is applied and on the opposite side;
- (c) surfaces with different types of coating;
- (d) materials with internal defects such as inclusions or laminations.

A.2.5 Equipment

The equipment employed for thickness measurement may be either of digital or "A-SCAN" type.

On coated surfaces, instruments using pulsed echo technique (either with oscilloscope or digital instruments using multiple echoes, single crystal technique) are required.

Single echo instruments may be used on uncoated surfaces, which have been cleaned and ground.

Equipment is to be calibrated in accordance with adequate written procedures according to recognised standards.

A.2.6 Procedures

The written operating procedures are to be drawn up taking into account the relevant Tasneef requirements and are to deal with at least the following:

- (a) safety requirements regulating access on board, in particular on tankers;
- (b) preparation for the work on board;
- (c) definition of the positions to be measured;
- (d) surface cleaning operations in such positions;
- (e) work on coated positions;
- (f) verification of instrument calibration.

A.2.7 Reporting

Report forms are to be approved by Tasneef; in particular, spaces are to be provided for the following information;

- (a) equipment used;
- (b) position of measurements;
- (c) thicknesses measured and corresponding original thicknesses;
- (d) name and qualification of the operator;
- (e) date and signatures of the firm's operator and technician in charge.

The reports are to be based on the requirements in Part A, Chapter 2 of the Rules for classification of ships.

The report are to be based on the guidelines given in UR Z7, UR Z7.1, UR Z7.2, Z10.1, Z10.2, Z10.3, Z10.4 and Z10.5, as relevant.

The Supplier is to report on the supplied service as per [2.2.9].

Appendix A - Firms engaged in thickness measurements on ships or mobile offshore units

A.2.8 VERIFICATION

The supplier is to have the Surveyor's verification of each separate job, documented in the report by the attending Surveyor(s) signature.

A.3 PARTICULAR CONDITIONS FOR THE VALIDITY OF QUALIFICATION

At classification surveys the firm is to provide all necessary facilities and assistance.

Tasneef reserves the right to require submission for approval of the proposed operating procedure prior to the survey.

The firm and its operators are to carry out the checks requested by the Tasneef Surveyor in charge and follow his instructions.

The operators act under the responsibility of the firm; the latter together with the operators involved are answerable for the accuracy of the results of the checks performed.

They are also responsible for drafting the relevant report complete with all necessary information to the satisfaction of the Surveyor in charge.

Appendix B - Firms engaged in tightness testing of closing appliances such as hatches, doors, etc. with ultrasonic equipment

B.1 EXTENT OF ENGAGEMENT

This Appendix contains additional specific requirements for the issue of the Qualification Certificate to firms engaged, with their own qualified operators, in tightness testing of closing appliances such as hatches, doors, etc. with ultrasonic equipment.

B.2 QUALIFICATION REQUIREMENTS

B.2.1

The supplier is to demonstrate that its operators have at least the following qualifications and experience: knowledge of different closing appliances such as hatches, doors, etc. including their design, functioning and sealing features;

- (1) experience with the operation and maintenance of different closing appliances such as hatches, doors, etc.;
- (2) documented participation in theoretical and practical training on board using the ultrasonic equipment specified.

B.2.2

The Supplier is to report on the supplied service as per [2.2.9].

B.3 EQUIPMENT

Before testing, it is to be demonstrated to the Surveyor that the equipment is suitable for the purpose of detecting leakage in closing appliances.

B.4 PROCEDURES

The supplier is to have documented work procedures, which are to include the manual for the ultrasonic equipment specified, its adjustment, maintenance, operation and approval.

The supplier is also responsible for drafting the relevant preliminary report including all necessary information as agreed with Tasneef.

Appendix C - Firms carrying out in-water survey on ships and mobile offshore units by diver or Remotely Operated Vehicle (ROV)

C.1 EXTENT OF ENGAGEMENT

This Appendix contains additional specific requirements for the issue of the Qualification Certificate to firms engaged in the performance of in-water survey in lieu of a docking survey and/or the internal hull survey of compartments filled with water on ships and mobile offshore units by diver or Remotely Operated Vehicle (ROV).

C.2 SPECIFIC REQUIREMENTS FOR QUALIFICATION

C.2.1 Personnel qualifications

The divers carrying out the inspection are to have at least one year's experience as an assistant diver carrying out surveys (including participation in a minimum of 10 different assignments).

ROV operators are to have at least one year of experience working with ROVs conducting inspections on vessels.

C.2.2 Training of personnel

The supplier is responsible for the qualification of its divers, Remotely Operated Vehicle (ROV) operators and supervisors and for their training in the use of the equipment utilised when carrying out survey.

Knowledge of the following is to be documented:

- (1) ship's underwater structure and appendages, propeller shaft, propeller, rudder and its bearings, etc.;
- (2) corrosive phenomena;
- (3) measurement of cathodic protection and related problems;
- (4) inspection criteria and techniques;
- (5) non-destructive testing in accordance with a recognised national or international industrial NDT standard. This requirement only applies if an in-water survey company performs non-destructive testing;
- (6) Certification as a thickness measurement firm when conducting thickness measurements under water;
- (7) bearing clearance measurements on rudders and propeller shaft;
- (8) underwater video monitoring with TV-monitors on deck, as well as still picture work;
- (9) operation of underwater communication system;
- (10) any special equipment necessary for the work carried out.

A plan for training of personnel in the reporting system, minimum Rule requirements for relevant ship or unit types, ship's or unit's underwater structure, measuring of bearing clearances, the recognition of corrosion damage, buckling and deteriorated coatings, etc. is to

be included.

C.2.3 Personnel skills

The operators are to be able to:

- (1) correctly use the equipment, with particular attention to that for non-destructive examinations, video tapes and audio communication with the surface;
- (2) easily operate in tandem with the Surveyor attending on the surface, in particular using audio-visual communication;
- (3) easily perform, underwater, those checks and examinations foreseen for the type of survey concerned (see Part A of the Rules for the classification of ships);
- (4) clearly and fully describe the findings of the checks carried out and draft the relevant report, substantiating it where necessary with sketches complete with dimensions.

C.2.4 Supervisor

Diving Supervisor – Diving supervisor is to be qualified according to the supplier's general requirements and is to have a minimum of two years' experience as a diver carrying out inspection.

ROV Supervisor – ROV supervisor is to have a minimum of two (2) years of experience conducting inspections with ROVs.

C.3 PRACTICAL EXAMINATION

C.3.1 General

During the practical examination of the service performance, the supplier is to demonstrate that his operators have the knowledge and skills as required in [C.2.2] and [C.2.3].

C.4 SURVEY PERFORMANCE AND EQUIPMENT

C.4.1

In carrying out the surveys, operators are to act under the direction and responsibility of a supplier authorised the Tasneef.

The supplier is to make available all the necessary equipment and provide any assistance required.

The supplier is fully responsible for the equipment utilised during the survey.

Tasneef reserves the right to require prior submission for examination of the operating procedure foreseen.

During the survey the supplier and its operators are to carry out the checks required by the Surveyor in charge

Appendix C - Firms carrying out in-water survey on ships and mobile offshore units by diver or Remotely Operated Vehicle (ROV)

and to follow his instructions.

The accuracy of the findings of the examinations is the responsibility of the supplier and the operators employed; such findings are to be the subject of a special report.

C.4.2 Equipment

During the surveys at least the following equipment is to be available:

- (1) closed circuit colour television with sufficient illumination equipment;
- (2) two-way communication between diver and surface staff;
- (3) video recording device connected to the closed circuit television;
- (4) still photography camera;
- (5) equipment for carrying out thickness gauging, non-destructive testing and measurements, e.g. clearances, indents, etc., as relevant to the work to be performed;
- (6) equipment for hull cleaning;

In addition, the following is to be available for firms carrying out survey by ROV:

- (7) Remote Operated Vehicle;
- (8) Adequate controls or programming for the ROV functions required

C.5 PROCEDURES AND GUIDELINES

The supplier is to have documented operational procedures and guidelines on how to carry out the survey and how to handle the equipment. These are to include:

- (1) two-way communication between diver and surface;
- (2) video recording and closed circuit television operation;
- (3) guidance of the diver along the hull to provide complete coverage of the parts to be surveyed.

In addition, documented operational procedures and guidelines for firms carrying out in-water survey by ROV is also to include:

- (4) guidance for the operation and maintenance of the Remotely Operated Vehicle;
- (5) Methods and equipment to ensure the ROV operator can determine the ROV's location and orientation in relation to the vessel.

C.6 VERIFICATION

The supplier is to have the Surveyor's verification of each separate job documented in the report by the attending Surveyor(s) signature.

C.7 DISCLAIMER

It is to be understood that compliance with the provisions of prevailing law regarding qualification for underwater activity and accident prevention is the exclusive responsibility of the Interested Parties and does not concern Tasneef in any way.

Appendix D - Firms engaged in surveys and maintenance of fire extinguishing equipment and systems

D.1 EXTENT OF ENGAGEMENT

This Appendix contains additional specific requirements for the issue of the Qualification Certificate of suppliers engaged in surveys and maintenance of fire-extinguishing equipment and systems, such as fixed fire extinguishing systems, portable fire extinguishers and fire detection and alarm systems.

D.2 SPECIFIC REQUIREMENTS FOR QUALIFICATION

D.2.1 Extent of approval

- (a) Service Suppliers are to have professional knowledge of fire theory, fire-fighting and fire-extinguishing appliances sufficient to carry out the maintenance and/or surveys, and to make the necessary evaluations of the condition of the equipment
- (b) In demonstrating professional knowledge, Service Suppliers are to have an understanding of the various types of fires and the extinguishing media to be used on them
- (c) For fixed fire-extinguishing systems, Service Suppliers are to demonstrate an understanding of the principles involved with gas, foam, deluge, sprinkler and watermist systems, as relevant for the approval being sought

D.2.2 Procedures

- (a) Service Suppliers are to have documented procedures and instructions on how to carry out the servicing of the equipment and/or system. These are to either contain or make reference to the Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate, and to international requirements
- (b) Additionally they are to make reference to any requirements (e.g. what markings should be appended to the equipment/system)

D.2.3 Reference Documents

The Service Supplier is to have access to the following documents:

- (a) Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate
- (b) Type Approval certificates showing any conditions that may be appropriate during the servicing and/or maintenance of fire-extinguishing equipment and systems
- (c) SOLAS, MSC.1/Circular.1318 (Guidelines for the Maintenance and Inspections of Fixed Carbon Dioxide Fire-Extinguishing Systems), International Code for Fire Safety Systems (FSS Code), ISO

6406 (Periodic inspection and testing of seamless steel gas cylinders), and any documentation specified in the authorisation or license from the equipment manufacturer

- (d) MSC/Circ.670 (Guidelines for the Performance and Testing Criteria and Surveys of High Expansion Foam Concentrates for fixed Fire-Extinguishing Systems)
- (e) MSC/Circ.798 (Guidelines for the Performance and Testing Criteria and Surveys of Medium Expansion Foam Concentrates for fixed Fire-Extinguishing Systems)
- (f) MSC/Circ.799 ((Guidelines for the Performance and Testing Criteria and Surveys of Expansion Foam Concentrates for fixed Fire-Extinguishing Systems of Chemical Tankers)
- (g) MSC.1/Circ.1312 (Revised Guidelines for the Performance and Testing Criteria and Surveys of Foam Concentrates for fixed Fire-Extinguishing Systems as corrected by MSC/Circ.1312/Corr.1)
- (h) MSC.1/Circ.1432 (Revised Guidelines for the maintenance and Inspection of Fire Protection Systems and Appliances)
- (i) IMO Res. A. 951(23) – Improved guidelines for marine portable fire extinguishers
- (j) MSC.1/Circ.1370 – Guidelines for the design, construction and testing of fixed hydrocarbon gas detection systems
- (k) Guidelines adopted by IMO for fire extinguishing equipment and systems specifically intended for service by service suppliers

D.2.4 Equipment and Facilities

D.2.4.1 General Requirements

- (a) If Service Suppliers undertake shore-based surveying and maintenance, they should maintain and implement procedures for workshop cleanliness, ventilation and arrangement, with due cognisance of the spares and extinguishing media being stored, to ensure safe and effective working procedures
- (b) Service Suppliers undertaking surveying and maintenance of equipment and systems onboard are to provide the appropriate facilities to either complete the work onboard or remove the necessary items to their workshops

D.2.4.2 Equipment

Sufficient and appropriate spares and tools are to be available as applicable, which are to include:

- (a) Various scales to weigh items
- (b) Means to hydrostatically pressure test

Appendix D - Firms engaged in surveys and maintenance of fire extinguishing equipment and systems

components/systems/storage bottles

- (c) Liquid/gas, flow meters, as appropriate
- (d) Pressure gauges or manometers
- (e) In the cases of foam concentrates and portable fire-extinguishers, chemical analysis equipment and a testing bay, respectively; and
- (f) Specific equipment/spares as may be specified by Manufacturer
- (g) Level measuring equipment for bottles
- (h) Recharging facilities for pressurized bottles, extinguishers and cartridges

D.2.4.3

The Supplier is to report on the supplied service as per [2.2.9].

Appendix E - Firms engaged in servicing inflatable liferafts, inflatable lifejackets, hydrostatic release units, inflatable rescue boats, marine evacuation systems

E.1 EXTENT OF ENGAGEMENT

E.1.1

This Appendix contains the specific requirements for the issue of the Qualification Certificate of suppliers engaged in the following services:

- a) Servicing of inflatable liferafts, inflatable lifejackets, hydrostatic release units and/or inflatable rescue boats
- b) Servicing of marine evacuation systems

- e) Type Approval certificates, showing any conditions that may be appropriate during the servicing and/or maintenance of inflatable liferafts, inflatable rescue boats, inflatable lifejackets, and hydrostatic release units
- f) LSA code/Chap.IV, 1995 SOLAS Conference Resolution 4 regarding marine evacuation systems.

E.1.2

The Supplier is to report on the supplied service as per [2.2.9].

E.2 EQUIPMENT AND FACILITIES

Service stations for inflatable liferafts are to be approved according to the conditions stated in IMO Res. A.761(18) as amended by IMO Res. MSC.55(66).

Where inflatable liferafts are subject to extended service intervals, MSC.1/Circ.1328 should also be followed.

E.3 PROCEDURES AND INSTRUCTIONS

The supplier is to have documented procedures and instructions on how to carry out servicing of equipment. Where inflatable liferafts are subject to extended service intervals in accordance with the requirements of SOLAS Regulation III/20.8.3, MSC.1/Circ.1328 is to be followed in addition to Resolution A.761(18) as amended by MSC.55(66).

E.4 LICENCE

The supplier is to provide evidence that it has been authorised or licensed to service the particular makes and models of equipment for which approval is sought by the equipment manufacturer.

E.5 REFERENCE DOCUMENTS

The Service Supplier is to have access to the following documents:

- a) IMO - Resolution A.761(18) - Recommendation on Conditions for the Approval of Servicing Stations for Inflatable Liferafts - (adopted on 4 November 1993), amended by Resolution MSC.55(66)
- b) IMO - Resolution MSC.55(66)
- c) IMO – MSC.1/Circ.1328 – Guidelines for the Approval of Inflatable Liferafts Subject to Extended Service Intervals Not Exceeding 30 Months
- d) Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate

Appendix F - Firms engaged in surveys and testing of radio communication equipment

F.1 EXTENT OF ENGAGEMENT

F.1.1

This Appendix contains additional specific requirements for the issue of the Qualification Certificate of suppliers engaged in the the following services:

- a) Surveys, inspection, testing, and/or measurement of radio equipment aboard ships or mobile offshore units for compliance with SOLAS regulations
- b) Annual testing of 406 MHz satellite EPIRBs for compliance with SOLAS Regulation IV/15.9
- c) The principles of this Appendix also apply to Service Suppliers involved in inspection, performance testing and maintenance of Automatic Identification Systems (AIS). The Service Supplier is to be familiar with the equipment with which it will be involved, such as being a service agent for the equipment manufacturer

F.1.2

The Supplier is to report on the supplied service as per [2.2.9].

F.2 REFERENCE DOCUMENTS

The supplier is to have access to the following documents:

- a) SOLAS 1974 as amended
- b) IMO Res. A.789(19): Specification on the survey and certification functions of recognised organisations acting on behalf of the administration
- c) MSC/Circ.1040/Rev.1 – Guidelines on Annual Testing of 406 MHz Satellite EPIRBs
- d) MSC.1/Circ.1252 – Guidelines on Annual Testing of the Automatic Identification System (AIS)
- e) SN/Circ.227, SN/Circ.227/Corr.1 and 245 – Guidelines for the Installation of a Shipborne Automatic Identification System (AIS) and amendments thereto
- f) ITU Radio Regulations
- g) IMO Performance Standards for the equipment for which the Service Supplier is approved
- h) Flag State Administration requirements.

F.3 SUPERVISOR

The supervisor is to have had at least two years' education from a technical school, experience as inspector, and is preferably to hold a General Operator Certificate (GOC) or a GMDSS Radioelectronic Certificate (REC), recognised by the ITU, to operate or test radio transmitters. He is to be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the GMDSS infrastructure.

F.4 RADIO INSPECTOR

The inspector carrying out the inspection is to have passed the supplier's internal training in radiotelephony, GMDSS and initial and renewal surveys, as applicable. The inspector is also to have had at least one year's education from a technical school training or as alternative hold evidence that he followed a technical course approved by the relevant Administration, at least one year's experience as an assistant radio inspector and should preferably hold an appropriate National Radio Operators Certificate, recognised by the ITU, such as a GMDSS General Operator's Certificate (GOC) or a GMDSS Radioelectronic Certificate (REC). He is to be aware of any local conditions for radio signal propagation, of regional radio stations and their facilities, and of the GMDSS infrastructure.

F.5 EQUIPMENT AND FACILITIES

F.5.1

The supplier is to have the main and auxiliary equipment required to correctly perform the inspection. A record of the equipment used is to be kept. The record is to contain information on the manufacturer and type of the equipment, and a log of maintenance and calibration.

F.5.2

A standard, which is relevant to the radio equipment to be tested, is to be available for the equipment and is to be cited in the inspection report.

F.5.3

For equipment employing software in the conjunction with testing/examination, this software is to be fully described and verified.

F.6 MINIMUM REQUIRED INSTRUMENTATION

During the surveys at least the following equipment is to be available:

- (1) equipment for measuring frequency, voltage, current and resistance;
- (2) equipment for measuring output and reflect effect on VHF and MF/HF;
- (3) equipment for measuring modulation on MF/HF and VHF (AM, FM, PM);
- (4) acid tester for checking specific gravity of lead batteries;
- (5) tester for checking of correct output from Free-Float Satellite EPIRB;
- (6) equipment for testing the performance of Automatic Identification Systems (AIS)

F.7 PROCEDURES AND INSTRUCTIONS

The supplier is to have documented procedures and instructions on how to carry out testing and examination of radio equipment. Procedures and instructions for operating each item of the testing/inspection equipment are also to be kept available at all times.

**Appendix G - Firms engaged in inspection and testing of centralised gas welding and cutting equipment
DELETED FROM 1/1/2016**

Appendix H - Firms engaged in surveys and maintenance of self-contained breathing apparatus

H.1 EXTENT OF ENGAGEMENT

This Appendix contains specific requirements for the issue of the Qualification Certificate of suppliers engaged in surveys and maintenance of self-contained breathing apparatus, Emergency Escape Breathing Devices (EEBD).

H.2 SPECIFIC REQUIREMENTS FOR QUALIFICATION

H.2.1

The supplier is to document and demonstrate that it has sufficient knowledge of the equipment and systems to carry out the inspection and testing of self-contained breathing apparatus in accordance with relevant standards and to make the necessary evaluations of the state of such apparatus.

In demonstrating professional knowledge, Service Suppliers are to have an understanding of the operational requirements involved with self-contained breathing apparatus and how these are to be maintained

Additionally, Service Suppliers are to demonstrate the necessary safety requirements applicable to such equipment.

H.2.2 PROCEDURES

Service Suppliers are to have documented procedures and instructions on how to carry out the servicing of the equipment and/or system. These are to either contain or make reference to the Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals, as appropriate

Additionally they are to make reference to any requirements (e.g. what markings are to be appended to the equipment/system) and how they are to be applied.

H.2.3 REFERENCE DOCUMENTS

The Service Supplier is to have access to the following documents:

- a) Manufacturers' servicing manuals, servicing bulletins, instructions and training manuals, as appropriate
- b) Type Approval certificates showing any conditions which may be appropriate during the servicing and/or maintenance of self-contained breathing apparatus.

H.2.4 EQUIPMENT AND FACILITIES

H.2.4.1 General Requirements

If Service Suppliers undertake shore-based surveying and maintenance, they are to maintain and implement procedures for workshop cleanliness, ventilation and arrangement, with due cognisance of the spares and

pressurised bottles being stored, to ensure safe and effective working procedures.

Service Suppliers undertaking surveying and maintenance of equipment and systems onboard are to provide the appropriate facilities to either complete the work onboard or remove the necessary items to their workshops.

H.2.4.2 Equipment

Sufficient and appropriate spares and tools are to be available for repair, maintenance and servicing of self-contained breathing apparatus in accordance with the requirements of the Manufacturers.

These are to include, as required by the self-contained breathing apparatus equipment and/or systems:

- a) Various scales to weigh items
- b) Means to hydrostatically pressure test components/systems/storage bottles
- c) Flow meters; and
- d) Pressure gauges or manometers
- e) Equipment for checking air quality
- f) Recharging facilities for breathing apparatus

H.2.5

The supplier is to report on the supplied service as per [2.2.9].

Appendix I - Firms engaged in examination of Ro-Ro ships' bow, stern, side and inner doors

I.1 EXTENT OF ENGAGEMENT

I.1.1

This Appendix contains additional specific requirements for the issue of the Qualification Certificate of suppliers engaged in the examination of ro-ro ships' bow, stern, side and inner doors.

I.1.2

The inspection and examination are to cover securing and locking devices, hydraulic operating systems, electric control systems for the hydraulics, electric indicator systems, as well as supporting, securing and locking devices and tightness testing.

I.1.3

The supplier is to report on the supplied service as per [2.2.9].

I.2 QUALITY SYSTEM

The supplier's company is to have in place a certified Quality System in accordance with the most current version of ISO 9000 series.

I.3 SUPERVISOR

In addition to the requirement in [2.2.3], the Senior Service Engineer (supervisor) is to have had a minimum of two years' education from a technical school.

I.4 TRAINING OF PERSONNEL

Operators carrying out Non-Destructive Test (NDT) are to be qualified to a recognised National or International Standard for the methods used.

I.5 REFERENCE DOCUMENTS

The supplier shall have access to the following reference documents:

- a) IMO - International Convention on the Safety of Life at Sea (SOLAS) 74/78, as amended
- b) ISO 9002:1994 - Quality systems - Model for quality assurance in production, installation and servicing
- c) UR Z24 - Survey Requirements for Shell and Inner Doors of Ro-Ro ships.

I.6 REQUIRED EQUIPMENT

During the surveys at least the following equipment is to be available:

- 1) For inspection of supporting, securing and locking devices, hinges and bearings:
 - Equipment for measuring clearances (i.e. feeler gauges, vernier calipers, micrometers);
 - Non-destructive test (i.e. dye penetrants, magnetic particle inspection).
- 2) For tightness testing:
 - Ultrasonic leak detectors or equivalent;
- 3) For inspection of hydraulic operating systems:
 - Pressure gauges;
 - Particle counter for analysing the quality of hydraulic fluid.
- 4) For inspection of electric control systems and indication systems:
 - Digital multi-meter;
 - Earth fault detector.

I.7 PROCEDURES AND INSTRUCTIONS

I.7.1

The supplier is to have access to drawings and documents including the operating and instruction manual.

I.7.2

The supplier is to have access to the service history of the door.

I.7.3

The supplier is to use, complete and sign a checklist which has been found acceptable by Tasneef.

Appendix J - Firms engaged in annual performance testing of Voyage Data Recorders (VDR) and simplified Voyage Data Recorders (S-VDR)

J.1 EXTENT OF ENGAGEMENT

This appendix contains additional specific requirements for the issue of the qualification certificate of suppliers engaged in annual performance testing and servicing of Voyage Data Recording (VDR) and Simplified Voyage Data Recorders (S-VDR) in accordance with SOLAS, Chapter V, Regulation 18.8 and IMO - MSC.1/Circular.1222/Rev.1 - Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR), as applicable.

J.2 LICENCE

The supplier is to provide evidence that he has been authorised or licensed by the equipment's manufacturer to service the particular makes and models of equipment for which the approval is sought.

J.3 MANUFACTURERS

Where the Service Supplier is also the Manufacturer of the Voyage Data Recorder (VDR) or Simplified Voyage Data Recorder (S-VDR) and has elected to apply IMO - MSC.1/Circular.1222/Rev.1 - Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) in its entirety for the purpose of acting as a Service Supplier engaged in annual performance testing, the following is to apply:

- a) The Manufacturer is responsible for appointing Manufacturer's Authorised Service Stations to carry out annual performance testing
- b) The Manufacturer is required to be an Approved Service Supplier and is to satisfy the requirements for Service Suppliers engaged in annual performance testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR), as applicable
- c) The Manufacturer's Authorised Service Station is not required to be an Approved Service Supplier
- d) The Manufacturer is to demonstrate that IMO - MSC.1/Circular.1222/Rev.1 - Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) is applied in its entirety

J.4 PROCEDURES

The Service Supplier shall have documented procedures and instructions.

Where the Service Supplier is also the Manufacturer of the Voyage Data Recorder (VDR) or Simplified Voyage Data Recorder (S-VDR) and has selected to apply IMO - MSC.1/Circular.1222/Rev.1 - Guidelines on Annual Testing of Voyage Data Recorders (VDR) and

Simplified Voyage Data Recorders (S-VDR) in its entirety for the purpose of acting as a Service Supplier engaged in annual performance testing, the following is to apply:

- a) The Manufacturer is to have documented procedures for the assessment and authorisation of Manufacturer's Authorised Service Stations who carry out annual performance testing
- b) The Manufacturer is to have documented procedures for the review of Manufacturer's Authorised Service Stations annual performance test reports, analysis of the Voyage Data Recorder (VDR) and Simplified Voyage Data Recorder (S-VDR) 12 hour log and the issue of annual performance test certificates to the Owner/Operator
- c) The Manufacturer is to maintain a list of Manufacturer's Authorised Service Stations that can be accessed (by any available means, e.g. via a nominated contact point or from the Manufacturer's website) upon request.

J.5 REFERENCE DOCUMENTS

J.5.1 The Service Supplier is to have access to the following documents:

- a) IMO - International Convention on the Safety of Life at Sea (SOLAS), 74/78, Ch V, Reg 18.8. – Approval, surveys and performance standards of navigational systems and equipment and voyage data recorder
- b) IMO - MSC.1/Circular.1222/Rev.1 - Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) - (11 December 2006)
- c) IMO - Resolution A.861(20) (adopted on 27 November 1997) as amended by IMO Resolution MSC.214(81) and revised by IMO Resolution MSC.333(90) – Performance Standards for Shipborne Voyage Data Recorders (VDRs) –
- d) IMO - Resolution MSC.163(78) - Performance Standards for Shipborne Simplified Voyage Data Recorders (S-VDRs) - (adopted on 17 May 2004), as amended by IMO Resolution 214(81).

J.5.2 The Service Supplier is to have access to applicable industry performance standards, e.g.:

- a) IEC 61996 - Maritime navigation and radio-communication equipment and systems - Shipborne voyage data recorder (VDR)
- b) IEC 61996-2 - Maritime navigation and radio communication equipment and systems – Shipborne voyage data recorder (VDR) – Part 2: Simplified voyage data recorded (SVDR) – Performance requirements, method of testing and required test results.

Appendix J - Firms engaged in annual performance testing of Voyage Data Recorders (VDR) and simplified Voyage Data Recorders (S-VDR)

J.5.3 The Service Supplier is also to have access to any documentation specified in the authorisation or license from the equipment manufacturer.

J.6 EQUIPMENT AND FACILITIES

In addition, the Service Supplier shall have equipment as specified in the authorisation or license from the equipment Manufacturer.

J.7 REPORTING - TEST REPORT

The Service Supplier is to issue a certificate of compliance as specified in the International Convention on Safety of Life at Sea (SOLAS 1974), as amended, Ch V, Reg 18.8.

Annual Performance Test of VDR and S-VDR should be recorded in the form of the model test report given in the Appendix to MSC.1/Circular.1222/Rev.1, signed and stamped by the Service Supplier and attached to the annual performance test certificate.

Where the Service Supplier is also the Manufacturer of the Voyage Data Recorder (VDR) or Simplified Voyage Data Recorder (S-VDR) and has selected to apply IMO - MSC.1/Circular.1222/Rev.1 - Guidelines on Annual Testing of Voyage Data Recorders (VDR) and Simplified Voyage Data Recorders (S-VDR) in its entirety for the purpose of acting as a Service Supplier engaged in annual performance testing, the Manufacturer is to make arrangements for the following:

- a) Review of the Manufacturer's Authorised Service Station annual performance test report
- b) Analysis of the recorder's 12 hour log
- c) Checking of the master record/database for the recorder.

The Service Supplier is to issue of the annual performance test certificate to the Owner/Operator within 45 days of completion of the annual performance test.

Appendix K - Firms engaged in surveys of low location lighting systems using photo luminescent materials and evacuation guidance systems used as an alternative to low location lighting systems

K.1 EXTENT OF ENGAGEMENT

This appendix contains additional specific requirements for the issue of the qualification certificate of suppliers engaged in luminance measurements of low location lighting systems using photo luminescent materials.

K.2 OPERATORS

The supplier is to demonstrate that its operators have the following qualifications and experience:

- a) adequate knowledge of the applicable international requirements (namely SOLAS Ch II-2 Reg.13.3.2.5; IMO Res. A.752(18)) - Guidelines for the Evaluation, Testing and Application of Low-Location Lighting on Passenger Ships, ISO 15370:2010; FSS Code Chapter 11);
- b) documented participation in theoretical and practical training on board using the equipment specified.

K.3 EQUIPMENT

The measuring instrument is to incorporate a fast-response photometer head with CIE (International Commission on Illumination) photopic correction and have a measurement level of at least 10^{-4} cd/m² to 10 cd/m².

K.4 PROCEDURES

The supplier is to have documented work procedures containing at least information on survey preparation, selection and identification of test locations.

K.5 REPORTING

The supplier is to report on the supplied service as per [2.2.9] and in accordance to Annex C of ISO:15370-2010.

K.6 VERIFICATION

The supplier is to have the Surveyor's verification of each separate job documented in the report by the attending Surveyor's signature.

K.7 REFERENCE DOCUMENTS

The Service Supplier is to have access to the following documents:

- a) IMO - International Convention on the Safety of Life at Sea (SOLAS), 74/78 Ch II-2, Reg 13.3.2.5 – Marking of escape routes
- b) IMO – Fire Safety Systems (FSS Code), Ch 11 – Low-location lighting systems
- c) IMO - Resolution A.752(18) - Guidelines for the Evaluation, Testing and Application of Low-Location

Lighting on Passenger Ships - (adopted on 4 November 1993)

- d) ISO 15370:2010 - Ships and marine technology - Low-location lighting on passenger ships – Arrangement
- e) MSC/Circ.1168 – Interim guidelines for the testing, approval and maintenance of evacuation guidance systems used as an alternative to low-location lighting systems.

Appendix L - Firms engaged in sound pressure level measurements of public address and general alarm systems on board ships

L.1 EXTENT OF ENGAGEMENT

This appendix contains additional specific requirements for the issue of the qualification certificate of suppliers engaged in sound pressure level measurements of public address and general alarm systems on board ships.

L.2 OPERATORS

The supplier is to demonstrate that its operators have the following qualifications and experience:

- (1) adequate knowledge of the applicable international requirements (SOLAS Reg.III/4 and III/6; LSA CODE Chapter VII/7.2; IMO CODE on alarms and indicators, 1995)
- (2) documented participation in theoretical and practical training on board using the equipment specified.

L.3 EQUIPMENT

The measuring equipment is to be an integrating sound level meter with frequency analyser capabilities complying with IEC (International Electrotechnical Commission) 60651 and IEC 61672, type 1 precision class, with, at least an A-weighting frequency response curve and 1 octave band filters, complying to IEC 61260, as appropriate for the measurements to be carried out. In addition microphones are to be of the random incidence type complying with IEC 60651.

L.4 PROCEDURES

The supplier is to have documented work procedures containing at least information on survey preparation, calibration, selection and identification of test locations.

L.5 REPORTING

The supplier is to report on the supplied service as per [2.2.9] describing, as a minimum, the environmental conditions of the tests and for each test location, the ambient noise level or the speech interference level, as appropriate for the measurements to be carried out.

The requirements specified in Part C, Ch 2, Sec 3, [3.14], [3.15] and [3.16] of the Rules for Classification of Ships are also to be met, as applicable.

L.6 VERIFICATION

The supplier is to have the Surveyor's verification of each separate job documented in the report by his signature.

L.7 REFERENCE DOCUMENTS

The Service Supplier is to have access to the following documents:

- a) SOLAS 74/78, Ch III, Pt A, Reg 4 – Evaluation, testing and approval of life-saving appliances and arrangements
- b) SOLAS 74/78, Ch III, Pt B, Reg 6 – Communications
- c) International Life-Saving Appliance (LSA) Code, Ch VII, Reg 7.2 – General alarm and public address system
- d) IMO - Code on Alarms and Indicators, 1995 as amended
- e) IEC 60651 (2001-10) - Sound level meters
- f) IEC 61672 - Electroacoustics - Sound level meters
- g) IEC 61260 - Electroacoustics - Octave-band and fractional-octave-band filters.

Appendix M - Firms engaged in testing of coating systems in accordance with IMO Resolution MSC.215(82) as amended and IACS UI SC223 and/or IMO Resolution MSC.288(87) as amended

M.1 EXTENT OF ENGAGEMENT

This appendix contains additional specific requirements for the issue of the qualification certificate of suppliers engaged in testing of coatings systems according to IMO Resolution MSC.215(82), as corrected by IMO MSC.1/Circ.1381 and amended by IMO Resolution 341(91) and IACS UI SC223 and/or IMO Resolution MSC.288(87), as corrected by IMO MSC.1/Circ.1381 and amended by IMO Resolution 341(91).

M.2 LABORATORIES

The laboratory is to provide to the Tasneef the following information:

1. A detailed list of the Laboratory test equipment for the coating approval according to the IMO Resolution MSC.215(82) as amended and/or MSC.288(87) as amended
2. A detailed list of reference documents comprising, as a minimum, those referred to in IMO Resolution MSC.215(82) as amended and/or MSC.288(87) as amended for the coating approval.
3. Details of test panel preparation, procedure of test panel identification, coating application, test procedures and a sample test report.
4. Details of exposure method and site for weathering primed test panels.
5. A sample daily or weekly log/form for recording test conditions and observations including unforeseen interruption of the exposure cycle with corrective actions.
6. Details of any sub-contracting agreement (if applicable).
7. Comparison test report with an approved coating system of laboratory if available.

M.3 REPORTING

Reference is made to the following IACS Recommendations:

- Rec. 101: IACS Model Report for IMO Resolution MSC.215(82) Annex 1 "Test Procedures for Coating Qualification"
- Rec. 102: IACS Model Report for IMO Resolution MSC.215(82) Annex 1 "Test Procedures for Coating Qualification", Section 1.7 – Crossover Test.

M.4 INSPECTION AND AUDIT

Audit of the test laboratory is to be based on this procedure, on the standards listed in the IMO Resolution MSC.215(82) as amended and/or MSC.288(87) as amended for the coating approval and on the Tasneef Rules for recognition of test laboratories.

Appendix N - Firms engaged in maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear

N.1 EXTENT OF ENGAGEMENT

This appendix contains additional specific requirements for the issue of the qualification certificate of suppliers engaged in maintenance, thorough examination, operational testing, overhaul and repair of:

- 1) lifeboats (including free-fall lifeboats), rescue boats and fast rescue boats; and
- 2) launching appliances and on-load and off-load release gear for lifeboats (including primary and secondary means of launching appliances for free-fall lifeboats), rescue boats, fast rescue boats and davit-launched liferafts.

The contents of this Appendix apply equally to manufacturers or ship's operator when they are acting as Service Suppliers.

N.2 LICENCE

Any Service Supplier engaged in maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear carried out in accordance with SOLAS regulation III/20 is to be approved for these operations for each make and type of equipment for which they provide the service, in accordance with an established system for training and authorization in accordance with IMO Resolution MSC.402(96)/Corr.1 (annex, section 7).

Such approval is to include, as a minimum:

- employment and documentation of personnel certified in accordance with a recognized national, international or industry standard as applicable, or an equipment manufacturer's established certification program. In either case, the certification program is to be based on the paragraph N.3 for each make and type of equipment for which service is to be provided; and,
- compliance with provisions of paragraphs N.4, N.5 and N.6.

In cases where an equipment manufacturer is no longer in business or no longer provides technical support, Service Suppliers may be approved for the equipment on the basis of prior approval for the equipment and/or long term experience, at least 4 years and demonstrated expertise as an authorized service provider.

N.3 CERTIFICATION OF PERSONNEL

- a) Personnel for the work specified in N.1 is to be certified by the manufacturer or the Service Supplier for each make and type of the equipment to be worked on. Approved Service Supplier is allowed to certify its own personnel (i.e. employed by the same service supplier) only.
- b) The education for initial certification of personnel is to be documented and address, as a minimum:
 - Causes of lifeboat and rescue boat accidents

- Relevant rules and regulations, including International Conventions
- Design and construction of lifeboats, (including free-fall lifeboats), rescue boats and fast rescue boats, including on-load release gear and launching appliances
- Education and practical training in the procedures specified in section 6 of the Annex to IMO Resolution MSC.402(96)/Corr.1 for which certification is sought
- Detailed procedures for thorough examination, operational testing, repair and overhaul of lifeboat s(including free-fall lifeboats), rescue boats and fast rescue boats,, launching appliances and on-load release gear, as applicable;
- Procedures for issuing a report of service and statement of fitness for purpose based on IMO Resolution MSC.402(96)/Corr.1 (annex, paragraph 5.3); and
- Work, health and safety issues while conducting activities on board.

The training for the personnel is to include practical technical training on thorough examination, operational testing, maintenance, repair and overhaul techniques using the equipment for which the personnel are to be certified. The technical training is to include disassembly, reassembly, correct operation and adjustment of the equipment. Classroom training is to be supplemented by field experience in the operations for which certification is sought, under the supervision of certified person.

Prior to issuance of personnel certification, a competency assessment is to be satisfactorily completed, using the equipment for which the personnel are to be certified.

Upon completion of training and competency assessment, a certificate is to be issued defining the level of qualification and the scope of the certification (i.e. makes and types of equipment and specifically state which activities (annual thorough examination and operational tests; 5-year thorough examination, overhaul; overload operational tests; repairs) are covered by the certification). The expiry date is to clearly be written on the certificate and is to be three years from the date of issue. The validity of any certificate is to be suspended in the event of any shortfall in performance and only revalidated after a further competency assessment.

A competency assessment is to be conducted to renew the certification. In cases where refresher training is found necessary a further assessment is to be carried out after completion.

N.4 REFERENCE DOCUMENTS

Service Supplier is to have access to the following documents:

Appendix N - Firms engaged in maintenance, thorough examination, operational testing, overhaul and repair of lifeboats and rescue boats, launching appliances and release gear

- a) IMO - Resolution MSC.402(96)/Corr.1 Requirements for Maintenance, Thorough Examination, Operational Testing, Overhaul and Repair of Lifeboats and Rescue Boats, Launching Appliances and Release Gear
- b) IMO – Resolution A.689(17), recommendation on testing of life-saving appliances and, for life-saving appliances installed on board on or after 1 July 1999
- c) IMO - Resolution MSC.81(70), as amended, revised recommendation on testing of life-saving appliances
- d) Manufacturer's instructions (including updates, amendments and safety notices) for repair work involving disassembly or adjustment of on-load release mechanisms and davit winches.
- e) Type Approval certificate showing any conditions that may be appropriate during the servicing and/or maintenance of lifeboats, launching appliances and on-load release gear.

N.5 EQUIPMENT AND FACILITIES

The Service Supplier is to have the following:

- a) Sufficient tools, and in particular any specialized tools specified in the equipment manufacturer's instructions, including portable tools as needed for work to be carried out on board ship
- b) Access to appropriate parts and accessories as specified by the equipment manufacturer for maintenance and repair
- c) For servicing and repair work involving disassembly or adjustment of on-load release mechanisms, availability of genuine replacement parts as specified or supplied by the equipment manufacturer.

N.6 REPORTING

The report is to conform to the requirements of IMO Resolution MSC.402(96)/Corr.1 (annex, paragraph 5.3). When repairs, thorough examinations and annual servicing are completed, a statement confirming that the lifeboat arrangements remain fit for purpose is to be promptly issued by the Service Supplier that conducted the work. A copy of valid documents of certification and authorization as appropriate is to be included with the statement.

Appendix O - Firms engaged in measurements of noise level onboard ships

O.1 EXTENT OF ENGAGEMENT

This appendix contains additional specific requirements for the issue of the qualification certificate of suppliers engaged in sound pressure level measurements onboard ship.

O.2 QUALIFICATIONS AND TRAINING

O.2.1 Supervisor

The supervisor is to have a minimum of 2 years of experience as an operator in sound pressure level measurements.

O.2.2 Operators

The operator is to have the following qualifications:

- a) Knowledge in the field of noise, sound measurements and handling of measurement equipment
- b) Adequate knowledge of the applicable international requirements (SOLAS Regulation II-1/3-12, as amended, and IMO Code on noise levels onboard Ships, as amended)
- c) At least 1 year's experience, including participation in a minimum of 5 measurement campaigns as an assistant operator
- d) Training concerning the procedures specified in IMO Code on Noise Levels onboard ships
- e) Be able to document theoretical and practical training onboard in using a sound level meter.

O.3 EQUIPMENT

O.3.1 Sound level meters

Measurement of sound pressure levels is to be carried out using precision integrating sound level meters. Such meters are to be manufactured according to IEC 61672-1(2002-05)¹, as amended, type/class 1 standard as applicable, or to an equivalent standard acceptable to the Administration².

O.3.2 Octave filter set

When used alone, or in conjunction with a sound level meter, as appropriate, an octave filter set is to conform to IEC 61260 (1995)³, as amended, or an equivalent standard acceptable to the Administration.

O.3.3 Sound Calibrator

Sound calibrators are to comply with the standard IEC 60942 (2003-01), as amended, and are to be approved by the manufacturer of the sound level meter used.

O.3.4 Calibration

Sound Calibrator and sound level meter are to be verified at least every two years by a national Standard laboratory or a competent laboratory accredited according to ISO 17025 (2005), as amended. A record with a complete description of the equipment used is to be kept, including a calibration log.

O.3.5 Microphone wind screen

A microphone wind screen is to be used when taking readings outside, e.g. on navigating bridge wings or on deck, and below deck where there is any substantial air movement. The wind screen is not to affect the measurement level of similar sounds by more than 0.5 dB(A) in "no wind" conditions.

O.4 PROCEDURES AND INSTRUCTIONS

The supplier is to have documented procedures and instructions to carry out service of the equipment.

Documented work procedures are at least to contain information on survey preparation, selection and identification of sound level measurement locations, calibration checks and report preparation.

O.5 REFERENCE DOCUMENTS

The supplier is to have access to the following documents:

- a) SOLAS 1988, as amended (Reg.II-1/3-12)
- b) Resolution A.468(XII) and IMO Resolution MSC.337(91) code on noise levels on board ships
- c) Resolution A.343(IX) Recommendation on methods of measuring noise levels at listening posts
- d) The Tasneef Rules and Guidelines as applicable.

O.6 REPORTING

A noise survey report is to be made for each ship. The report is to comprise information on the noise levels in the various spaces on board. The report is to show the reading at each specified measuring point. The points are to be marked on a general arrangement plan, or on accommodation drawings attached to the report, or are to otherwise be identified.

The format for noise survey reports is set out in appendix 1 of IMO Code on Noise Levels onboard Ships and is to conform to any other specific Tasneef requirement, as applicable (refer to IMO circular MSC.337(91)).

¹ Recommendation for sound level meters

² Sound level meters class/type 1 manufactured according to IEC 651/IEC 804 may be used until 1 July 2016

³ Octave-band and fractional-octave-band filters

Appendix O - Firms engaged in measurements of noise level onboard ships

O.7 VERIFICATION

The supplier is to have the Surveyor's verification of each separate job, documented in the report by the attending Surveyor(s) signature.

Appendix P - Firms engaged in tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for vessels in service

P.1 EXTENT OF ENGAGEMENT

This appendix contains additional specific requirements for the issue of the qualification certificate of suppliers carrying out the following:

- a) Global Vacuum Testing of Primary and Secondary Barriers
- b) Acoustic Emission (AE) Testing
- c) Thermographic Testing.

P.2 ADDITIONAL REQUIREMENTS FOR FIRMS ENGAGED IN GLOBAL VACUUM TESTING OF PRIMARY AND SECONDARY BARRIERS

P.2.1 Testing Procedures

Testing is to be carried out in accordance with cargo containment system designer's procedures as approved by Tasneef.

P.2.2 Licence

The supplier is to be authorized by the system designer to carry out the testing.

P.2.3 Equipment

Equipment is to be maintained and calibrated in accordance with recognized national or international industrial standards.

P.2.4 Reporting

The report is to contain the following:

- a) Date of testing
- b) Identity of test personnel
- c) Vacuum decay data for each tank
- d) Summary of test results.

P.3 ADDITIONAL REQUIREMENTS FOR FIRMS ENGAGED IN ACOUSTIC EMISSION (AE) TESTING

P.3.1 Testing Procedures

The supplier is to have documented procedures based upon recognized national or international industrial standards to perform ultrasonic leak test using AE sensors for the secondary barrier of membrane cargo containment systems. The procedures are to include details of personnel responsibilities and qualification, instrumentation, test preparation, test method, signal processing, evaluation and reporting.

Note: The differential pressure during testing should not exceed the containment system designer's limitations.

P.3.2 Qualification

P.3.2.1 Supervisor

The responsible supervisor is to be certified to a recognized national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) and have one year experience at Level II.

P.3.2.2 Operators

The operators carrying out the acoustic emission (AE) testing are to be certified to a recognized national or international industrial standard (e.g. Level I, ISO-9712 as amended or SNT-TC-1A as amended) and shall have adequate knowledge of ship structures sufficient to determine sensor placement.

P.3.3 Equipment

Equipment is to be maintained and calibrated in accordance with recognized national or international industrial standards or equipment manufacturer's recommendations.

P.3.4 Evaluation of acoustic emission (AE) testing

Evaluation of acoustic emission (AE) testing is to be carried out by the supervisor or individuals certified to a recognized national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) and have one year experience at Level II.

P.3.5 Reporting

The report is to contain the following:

- a) Date of testing
- b) Supervisor and operator(s) certifications
- c) Description of time and pressure of each cycle of test
- d) List and sketch detailing location of possible defects.

P.4 ADDITIONAL REQUIREMENTS FOR FIRMS ENGAGED IN THERMOGRAPHIC TESTING

P.4.1 Testing Procedures

Testing is to be carried out in accordance with the cargo containment system designer's procedures as approved by Tasneef.

P.4.2 Licence

The supplier is to be authorized by the system designer to carry out the testing.

Appendix P - Firms engaged in tightness testing of primary and secondary barriers of gas carriers with membrane cargo containment systems for vessels in service

P.4.3 Qualification

P.4.3.1 Supervisor

The responsible supervisor is to be certified to a recognised national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing.

SNT-TC-1A certified personnel must provide evidence that training on Level II or above has been administered by an independent training body centrally certified to ASNT or a comparable nationally recognized certification scheme.

P.4.3.2 Operators

The operators carrying out the imaging are to be certified to a recognized national or international industrial standard (e.g. Level I, ISO-9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing and are to have adequate knowledge of ship structures sufficient to determine position for each identified image, and of the containment system to understand the basis of the testing. SNT-TC-1A certified personnel must provide evidence that training on Level I or above has been administered by an independent training body centrally certified to ASNT or a comparable nationally recognized certification scheme.

P.4.4 Equipment

Thermal cameras and sensors are to be in accordance with the system designer's procedures with regards to sensitivity, accuracy and resolution.

Equipment are to be in accordance with recognized standard (IEC, etc.) with regards their safety characteristics for the use in hazardous areas (in gas explosive atmosphere), maintained and calibrated in accordance with the maker's recommendations.

P.4.5 Evaluation of thermographic images

Evaluation of thermographic images is to be carried out by the supervisor or individuals certified to a recognized national or international industrial standard (e.g. Level II, ISO-9712 as amended or SNT-TC-1A as amended) with additional certification in infrared/thermal testing. SNT-TC-1A certified personnel must provide evidence that training on Level II or above has been administered by an independent training body centrally certified to ASNT or a comparable nationally recognized certification scheme.

P.4.6 Reporting

The report is to contain the following:

- a) Date of testing
- b) Supervisor and operator(s) certifications
- c) Differential pressures of all phases
- d) List and sketch detailing location of thermal indications
- e) Thermographic images of all phases of testing for thermal indications
- f) Evaluation of thermal images indicating possible leaks.

Appendix Q - Firms engaged in survey using Remote Inspection Techniques (RIT) as an alternative means for Close-up Survey of the structure of ships and mobile offshore units

Q.1 EXTENT OF ENGAGEMENT

This Appendix contains additional specific requirements for the certification of firms, with their own qualified operators, engaged in close-up surveys of ships' structure and mobile offshore units' structure, carried out by means of Remote Inspections Techniques, without the need for direct physical access of the surveyor, whereas such inspections are permitted and in the terms, conditions and limitations specified therein.

Reference is also made to IACS Rec. No. 42 "Guidelines for Use of Remote Inspection Techniques for Surveys".

For the scope of this Appendix the following definitions are provided:

- Close-Up Survey: it is a survey where the details of structural components are within the close visual inspection range of the surveyor i.e. normally within reach of hand.
- Remote Inspection Techniques (RIT): it is a means of survey that enables examination of any part of the structure without the need for direct physical access of the surveyor. Remote inspection techniques may include the use of:
 - Unmanned Aerial Vehicles (UAV)
 - Drones
 - Unmanned robot arm
 - Remotely Operated Vehicles (ROV)
 - Climbers
 - Crawlers
 - Umbilical Fiber Systems (e.g Boroscopes, Fiber Cameras, etc.)
 - Other means acceptable to the Society.

For in-water close-up survey of the internal compartments by Remotely Operated Vehicle (ROV), suppliers are also to hold separate approval as a "Firm carrying out an in-water survey on ships and mobile offshore units by diver or Remotely Operated Vehicle (ROV)" (see Appendix C).

Q.2 QUALIFICATION REQUIREMENTS

Q.2.1 Training and qualification of operators

The supplier is responsible for the training and qualification of its operators to undertake the remote inspections. UAV Pilots are to be qualified and licenced in accordance with applicable national requirements or an equivalent industrial standard acceptable to the society.

Knowledge of the following is to be documented:

- Marine and/or offshore nomenclatures.
- The structural configuration of relevant ships types and MOUs, including internal structure.
- The remote inspection equipment and its operation.

- Survey plans for examination of hull spaces of various configurations, including appropriate flight plans if using a UAV.
- Thickness measurement (TM) and non-destructive test (NDT) in accordance with a recognised National or International Industrial NDT Standard when these are part of the service. Suppliers undertaking TMs are to hold separate approval as a 'Firm engaged in thickness measurements on ships' (see Appendix A).

Q.2.2 Training plan

The supplier is to maintain a documented training plan for personnel. The plan is to include requirements for training in the Tasneef Rules' requirements for the structure of relevant ships types and MOUs, the recognition of structural deterioration (including corrosion, buckling, cracking and deteriorated coatings) and use of the reporting system.

Q.2.3 Supervisor

The supplier is to have a responsible supervisor certified according to the recognized national requirements or an equivalent industrial standard. The supervisor is to have a minimum of two years' experience in the inspection of ship's and/or MOU's structure.

Q.2.4 Operators

The supplier is to have a suitable number of operators carrying out the inspection, certified according to the recognized national requirements or an equivalent industrial standard and have had at least one year's experience as an assistant carrying out inspections of ship's and/or MOU's structure (including participation in a minimum of five different assignments). The operators of those RIT which require, according to the international and national legislations, to be licensed for their use are to hold valid documentation issued by the appropriate Bodies (e.g. UAV Pilots are to be qualified and licenced in accordance with applicable national requirements).

Q.3 EQUIPMENT

Based on the intended service for which the certification/approval is sought, and the type of operation involved (e.g., external offshore structure inspection, internal marine vessel cargo tank, hold, ballast, void and other inspections), the specifications and capabilities of the equipment may be different.

The following equipment is to be available to the supplier:

- Remotely operated platform with data capture devices capable of operation within an enclosed space.

Appendix Q - Firms engaged in survey using Remote Inspection Techniques (RIT) as an alternative means for Close-up Survey of the structure of ships and mobile offshore units

- Means of powering the platforms with sufficient capacity to complete the required inspections, including spare batteries if applicable.
- Data collection devices which may include cameras capable of capturing in high definition both video images and still images.
- Illumination equipment.
- High definition display screen with live high definition feed from inspection cameras (when this is part of the RIT).
- Means of communication.
- Data recording devices, as applicable.
- Equipment for carrying out thickness gauging and/or non-destructive testing, as relevant to the work to be performed (when this is part of the service).

Note: The differential pressure during testing should not exceed the containment system designer's limitations.

Q.4 PROCEDURES AND GUIDELINES

The supplier is to have documented operational procedures and guidelines for how to plan, carry out and report inspections; how to handle/operate the equipment; collection and storage of data. These are to include:

- Requirements for preparation of inspection plans. When UAV are part of the equipment flight plans are to be included.
- Operation of the remotely operated platforms.
- Operation of lighting.
- Calibration of the data collection equipment.
- Operation of the data collection equipment.
- Two-way communication between the operator, platform, Surveyor, other personnel such as support staff and ships officers and crew.
- Guidance of the operator to provide complete coverage of the structure to be inspected.
- Guidance for the maintenance of the remotely operated platforms, data capture and storage devices and display screens, as applicable.
- Requirements for the collection and validation of data.
- If data is to be stored, then requirements for location attribution (geo-tagging), validation and storage of data.
- Requirements for the reporting of inspections, including the recording of damages and defects found during inspection and repair work.

Q.5 DOCUMENTATION AND RECORDS

The supplier is to maintain the following:

- Records of training.
- Operator statutory and regulatory certificates and licences.
- Equipment register for UAVs, Robots, data collection devices, data analysis devices and any associated equipment necessary to perform inspections.

- Equipment maintenance manuals and records / logbook.
- Records of calibration.
- UAV / Robot operation logbook

Q.6 PROCEDURES AND GUIDELINES

The supplier is to have documented operational procedures and guidelines for how to plan, carry out and report inspections; how to handle/operate the equipment; collection and storage of data. These are to include:

Q.7 VERIFICATION

The supplier is to have the Surveyor's verification of each separate job, documented in the report by the attending Surveyor(s) signature.

Appendix R - Firms engaged in Watertight Cable Transit Seal Systems Inspection on Ships and Mobile Offshore Units

R.1 Extent of engagement

R.1.1 Inspection of the Cable Transit Seal Systems

Inspection of the Watertight Cable Transit Seal Systems for compliance with the relevant approval certificates and product installation manuals, (types of penetrating cables, dimensions, fill ratio and insulation details, as applicable).

R.2 Extent of Approval

R.2.1 General

The contents of this procedure apply equally to manufacturers or shipyards when they are acting as Service Suppliers.

R.2.2 Service Supplier engaged in the inspections

Any Service Supplier engaged in the inspections of watertight cable transit seal systems is to be qualified in these inspections for each make and type of equipment for which they provide the inspection, and provide manufacturers documentary evidence that they have been so authorized or they are certified in accordance with an established system for training and authorization.

Such qualification is to include, as a minimum:

- employment and documentation of personnel certified in accordance with a recognized national, international or industry standard as applicable, or an equipment manufacturer's established certification program. In either case, the certification program is to be based on the paragraph R.3 for each make and type of equipment for which inspection is to be provided, and
- compliance with provisions of paragraphs R.4, R.5 and R.6

R.2.3 Equipment manufacturer no longer in business

In cases where an equipment manufacturer is no longer in business or no longer provides technical support, Service Suppliers may be authorised for the equipment on the basis of prior authorization for the equipment and/or long term experience and demonstrated expertise as an authorized service provider.

R.3 Qualifications and Training of Personnel

R.3.1 General

Personnel for the work specified in R.1.1 is to be trained and qualified in the inspection for which they are authorised, for each make and type of equipment for which they provide the inspection.

R.3.2 Education for initial certification of personnel

The education for initial certification of personnel is to be documented and addressed, as a minimum:

- Procedures and instructions for the inspection of the watertight cable transit seal systems
- Common problems found with the initial installation and in-service inspections of watertight cable transit seal systems
- Relevant rules and regulations, including International Conventions
- Procedures for reporting on initial installation and in-service inspections of watertight cable transit seal systems in the Cable Transit Seal Systems Register.

R.3.3 Practical technical training

The education and training for the personnel is to include practical technical training on actual inspection using the watertight cable transit seal systems for which the personnel are to be certified.

The technical training is to include disassembly, reassembly and adjustment of the equipment.

Classroom training is to be supplemented by field experience in the inspections for which certification is sought, under the supervision of an experienced senior certified person.

R.3.4 Verification of personnel's satisfactory completion of a competency assessment

At the time of initial certification and at each renewal of certification, the service supplier is to provide documentation to verify personnel's satisfactory completion of a competency assessment using the equipment for which the personnel are certified.

R.3.5 Refresher training

The Service Supplier is to require refresher training as appropriate to renew the certification.

R.4 Reference Documents

R.4.1 General

The Service Supplier is to have access to the following documents:

- Manufacturer's servicing manuals, servicing bulletins, instructions and training manuals as appropriate.
- Type Approval certificate showing any conditions

Appendix R - Firms engaged in Watertight Cable Transit Seal Systems Inspection on Ships and Mobile Offshore Units

that may be appropriate during the installation or maintenance of the watertight cable transit seal system.

R.5 Equipment and Facilities

R.5.1 General

The Service Supplier is to have access to the following:

- Sufficient tools, and in particular any specialized tools specified in the equipment manufacturer's instructions, including portable tools as needed for work to be carried out on board ship.

R.6 Reporting

R.6.1 General

On completion of inspection, the Service Supplier will issue a report confirming the condition of the Watertight Cable Transit Seal System. They will also record the results of their inspection in the Cable Transit Seal System Register.

Appendix S - Firms engaged in Commissioning Testing of Ballast Water Management Systems (BWMS)

S.1 EXTENT OF ENGAGEMENT

This appendix contains specific requirements for the Sampling and Analysis of ballast water and Verification of the self-monitoring equipment during Commissioning Testing of Ballast Water Management Systems (BWMS), for Statutory purposes.

S.2 PROCEDURE

S.2.1 Service suppliers

Service suppliers are to have documented procedures including:

- Procedures for sampling collection and handling, analysis, assessment of BWMS correct operations and documenting and reporting. The procedures are to outline how the ballast water sampling and analysis is conducted with respect to each size class of organisms;
- Operating procedures for the ballast water test equipment specified including calibration, adjustment and maintenance.

S.2.1.1

Service Suppliers are to be familiar with the BWMS operation including features and limits of each treatment technology, and self-monitoring parameters.

S.2.1.2

Service Suppliers are to be accredited to relevant standards such as ISO/IEC 17025 or equivalent, as applicable.

S.2.1.3

Service Suppliers are to be independent of the BWMS manufacturer or supplier including shipyards.

S.3 OPERATORS

S.3.1

Service suppliers are expected to be able to perform both the biological sampling and assessment of self-monitoring parameters and has responsibility for document that the requirements to the operator are satisfied. Therefore, operators who conduct commissioning testing are to:

- demonstrate knowledge in the use of different ballast water testing equipment for the purpose of assessing biological efficacy;
- have documented evidence of sufficient engineering and biological knowledge to conduct the commissioning testing;
- have knowledge of IMO BWM.2/Circ.70/Rev.1, as may be amended - 'Guidance for the Commissioning Testing of Ballast Water Management Systems' and IMO BWM.2/Circ.42/Rev.2 - 'Guidance on Ballast Water

Sampling and Analysis for Trial Use in accordance with the BWM Convention and Guidelines (G2)', as may be amended;

- (*) be trained in the proper use of portable indicative analysis equipment. Review of training records and/or interviews should be conducted to confirm the equipment will be properly used during testing;
- (*) be familiar with and understand the design concepts of the Guidelines G2 sampling devices installed on the vessel's water ballast system. Personnel is to understand the need to maintain the G2 sampling devices clean and free of contaminants and the importance of controlling the ballast water sample flow rates from the G2 device (to avoid organism mortality in the sample);
- (*) be familiar with the technologies utilized by the indicative sampling equipment and understand water quality issues that are both conducive to successful use of the equipment and circumstances that could challenge the use of the equipment;
- (*) be trained in the proper disposal procedures for water samples following testing.
- (Δ) have knowledge of the system design limitations of the BWMS (as stated in the BWMS type approval certificate) and knowledge of the BWMS self-monitoring parameters, such as flow rate, pressure, TRO concentration, UV transmittance/intensity, etc, and how the BWMS notifies the operator in case he operates BWMS outside its system design limitations. This knowledge is relevant for evaluating whether the selfmonitoring equipment of the BWMS indicates correct operation of the BWMS. In case Service Supplier are not present during ballasting operations, the Service Supplier is to have knowledge of how to access the BWMS log to evaluate that the BWMS operated correctly during ballasting operations;
- (Δ) have the procedures and knowledge to be able to assess the applicable selfmonitoring parameters (e.g., flow rate, pressure, TRO, UV intensity, etc.) of the BWMS, taking into account the System Design Limitations of the BWMS;

Notes:

- (1) the points marked with (*) are qualifications for operators performing sampling and analysis of ballast water
- (2) the points marked with (Δ) are the qualifications for operators performing verification of the self-monitoring equipment
- (3) the points above without symbol are the common qualifications for service supplier.

Appendix S - Firms engaged in Commissioning Testing of Ballast Water Management Systems (BWMS)

S.4 EQUIPMENT AND FACILITIES

S.4.1

Equipment, procedures and methods for detailed analysis, where applicable, are to be in accordance with relevant International standard and/or Industry standards accepted by the Society.

Laboratories conducting sample enumeration are to be accredited to ISO/IEC 17025 standard, or equivalent.

S.4.2

Testing is to be conducted using indicative analysis equipment accepted by the Society.

Information and reference to the acceptance documents for the equipment used is to be submitted to the Society in the report which includes the results from the commissioning test as per IMO BWM.2/Circ.70/Rev.1, as may be amended. In case the indicative analysis equipment used has not been previously accepted by the Society, the following information is to be submitted to the Society:

- Equipment information - type, model, technology used, evidence of calibration, detection range, Organism type/size classes that can be analyzed.
- Test results conduct for the verification of accuracy, detection range and repeatability.
- Certificate of standards, if available.

S.4.3

For indicative analysis equipment planned to be used, the equipment OEM instruction manuals are to be available. The manuals are to include, at least, clear guidance for the proper storage, handling, operation, maintenance, repair, and calibration.

Note:

Each Service Supplier applicant will present the Surveyor their confidential internal procedures for conducting the indicative testing. Not all the equipment listed in the references will be used. For all equipment planned to be used, the instruction manuals are to be available.

The Service Supplier will need to use specialty devices (e.g., sieves, screens, etc.) to separate the different organism sizes classes (i.e., $\geq 10 \mu\text{m}$ to $< 50 \mu\text{m}$, and $\geq 50 \mu\text{m}$, and indicator microbes) to support analysis of each size class.

S.4.4

Equipment used for the analysis of other physical-chemical water parameters is to be suitable for the intended use.

S.4.5

Indicative analysis equipment should be properly stored or transported to avoid damage and disturbance to

calibrations, etc. when transporting from the Service Suppliers facilities to the vessels.

S.5 SAMPLING AND ANALYSIS

S.5.1

Service Suppliers are to follow relevant guidelines on sampling of ballast water. A standard operating procedure is to be defined for sampling of uptake water. Discharge sampling is to follow the IMO's 'Guidelines for Ballast Water Sampling (G2)'.

S.5.2

The representative samples are to be analyzed as a minimum for the two size classes of organisms, namely $\geq 50 \mu\text{m}$ and $\geq 10 \mu\text{m}$ to $< 50 \mu\text{m}$, specified in IMO Circular BWM.2/Circ.70/Rev.1 - Guidance for the Commissioning Testing of Ballast Water Management Systems using indicative analysis methods. Detailed analysis of all organism type/size classes or combination of detail and indicative analysis can also be performed.

S.5.3

Service Suppliers are to maintain a record of:

- Operation of the BWMS during test period, including any recorded data or operator observations associated with the performance deviations, alarms or abnormal/unexpected operations.
- Applicable self-monitoring parameters.

S.5.4

In case the commissioning testing requires the Service Supplier's personnel to work in hazardous areas (e.g., pump room for tankers, etc.), the Service Supplier is to either have equipment certified for the spaces or provide the Surveyor with a list of vessels for which they would not be able to conduct testing.

S.6 REPORTING

S.6.1

Service Suppliers are to provide reports detailing the results of sampling and analysis of ballast water and assessment of self-monitoring parameters during commissioning testing. The format is to be acceptable to the Society. The report, as a minimum, will contain the following:

- Manufacturer's name
- Model name
- BWMS Technology limiting operating conditions and system design limitations
- Operation required, e.g., ballasting, de-ballast, circulation, one pass, in tank, etc
- Treatment rated capacity (TRC) in m^3/h

Appendix S - Firms engaged in Commissioning Testing of Ballast Water Management Systems (BWMS)

- Relevant performance parameters (e.g. TRO, UV dose, UVI, flow rate or other relevant performance parameter)
- Alarms developed during operation
- Installation location
- Type Approval issued by and Certificate No
- Date installed
- Results of Sample analysis
- Pump flow rate, ballast tanks and volume
- Comments/Options: Filter and other major components, Process measurements.

S.7 REFERENCE DOCUMENTS

S.7.1

The Service Supplier is to have access to the following documents, as may be amended:

- IMO Resolution MEPC.300(72) — Code for Approval of Ballast Water Management Systems (BWMS Code)
- IMO Resolution MEPC.173(58) — Guidelines for Ballast Water Sampling (G2)
- IMO Circular BWM.2/Circ.42/Rev. 2 — Guidance on Ballast Water Sampling and Analysis for Trial Use in accordance with the BWM Convention and Guidelines (G2)
- IMO Circular BWM.2/Circ.70/Rev.1 - Guidance for the Commissioning Testing of Ballast Water Management Systems
- IMO Circular BWM.2/Circ.61 - Guidance on Methodologies that may be used for Enumerating Viable Organisms for Type Approval of Ballast Water Management Systems
- IMO Circular BWM.2/Circ.69 - Guidance on System Design Limitations of Ballast Water Management Systems and their Monitoring
- IMO Resolution MEPC.279(70) - 2016 Guidelines for Approval of Ballast Water Management Systems (G8)
- IMO Resolution A.1120(30) – Survey Guidelines under the Harmonized System of Survey and Certifications (HSSC), 2017 (for BWMS that were Type Approved to the 2016 G8).

Annex 1 - Firms engaged in testing cyber resilience of ships

1 EXTENT OF ENGAGEMENT

This Annex contains additional specific requirements for the certification of firms engaged, with their own qualified operators, in testing cyber resilience of ships according to the Tasneef “Guide for the Assessment of Cyber Resilience of Ships and Offshore Units” and in undertaking inspections according to Tasneef Rules Pt F, Sec 29 “Cyber Resilience”, whereas such testing and inspections are permitted and in the terms, conditions and limitations specified therein.

2 QUALIFICATION AND TRAINING REQUIREMENTS

The Supplier is responsible for the training and qualification of its operators to undertake the above-mentioned testing and inspections activities. Qualification and training of Supplier’s personnel should be in accordance to recognized national or international regulations and/or industry standard, where available and as applicable. Where such regulations or standards do not exist, the Supplier is to define standards for the training and qualification of its personnel relevant to the functions they are intended to perform.

In particular, the Supplier is to:

- 1) Have a program for the theoretical and practical training of operators;
- 2) Have a responsible supervisor qualified according to the Supplier’s general requirements and having a minimum of two years’ experience as an operator in cyber resilience testing and inspection, with adequate knowledge of ship’s IT and OT systems and of the items to be inspected, including nomenclature of parts, and of applicable Tasneef Rules;
- 3) Have a suitable number of operators having a minimum of one years’ experience as an operator in cyber resilience testing and inspection, with adequate knowledge of ship’s IT and OT systems and of the items to be inspected, including nomenclature of parts, and of applicable Tasneef Rules;
- 4) Have a safety training program. Safety training contents should adhere to any national/local or industry recognized requirements. Where no such requirements are applicable, the Supplier is to provide adequate safety training to the designated personnel that may include:
 - a) Personal protective equipment (PPE) training

- b) Dropped object awareness training
- c) Confined space entry and safety practice
- d) Hazardous area identification and safety practice
- e) Maritime emergency response and evacuation training

2.1 PERSONNEL QUALIFICATIONS

The personnel carrying out the testing and inspection activities are to have at least one year’s experience (for operators) or two years’ experience (for supervisor), with adequate knowledge of ship’s IT and OT systems and of the items to be inspected, including nomenclature of parts, and of applicable Tasneef Rules.

Personnel should also demonstrate adequate knowledge of the following international rules and regulations and industry standards:

- IMO MSC.428(98) “Maritime Cyber Risk Management in Safety Management Systems”
- IMO MSC-FAL.1-Circ.3 “Guidelines on Maritime Cyber Risk Management”
- IMO “International Safety Management Code” (ISM Code)
- IACS Unified Requirements and Recommendations relevant to Cyber Resilience
- Tasneef “Guide for the Assessment of Cyber Resilience of Ships and Offshore Units”
- Tasneef Rules Pt F, Sec 29 “Cyber Resilience”
- “Framework for Improving Critical Infrastructure Cybersecurity” by National Institute of Standards and Technology (NIST Cybersecurity Framework)
- ISO/IEC 27001 “Information technology — Security techniques — Information security management systems — Requirements”
- ISA/IEC 62443 family of standards
- “The Guidelines on Cyber Security Onboard Ships” by BIMCO, CLIA, ICS, INTERCARGO, INTERMANAGER, INTERTANKO, IUMI, OCIMF and WORLD SHIPPING COUNCIL
- “Tanker Management and Self Assessment” (TMSA), Element 13 “Maritime Security” by OCIMF.

Evidence of qualification and training of Supplier’s personnel in accordance to other recognized national or international regulations and/or industry standard, where available, will also be taken into consideration.

Annex 1 - Firms engaged in testing cyber resilience of ships

2.2 PERSONNEL SKILLS

The Supplier's supervisor and operators are to be able to:

- 1) Understand the functions, operation and user interface of IT and OT systems onboard, including alerts and indicators relevant to protection from and detection of cyber events occurring on such systems and networks thereof.
- 2) Correctly use the equipment and tools for vulnerability assessment, penetration test, network analysis and other tools used during testing and inspection activities, and correctly interpret the output from such tools, devising information about the severity/criticality of detected issues by means of suitable metrics.
- 3) Operate in real-time cooperation with the attending Surveyor, including operation in remote survey conditions.
- 4) Describe the findings of the activities carried out and draft the relevant report.

2.3 TRAINING OF PERSONNEL

The Supplier is to maintain a documented training plan for personnel. The plan is to include requirements for training in the Tasneef Rules' requirements, use of equipment and tools, refresher courses on new onboard automation and cyber technologies, cyber threats, attack types, risks and countermeasures related to shipping.

3 EQUIPMENT

Based on the intended service for which the certification/approval is sought, and the type of operation involved (e.g. vulnerability assessment, penetration test, network analysis, etc.), the specifications and capabilities of the equipment may be different. The Supplier is to provide a record of the equipment and devices used for each service and operation, containing information on their features, main components, relevant maintenance procedures, configuration and calibration, as applicable.

The Supplier is responsible for the maintenance and update of equipment and tools used in testing and inspection activities and is to ensure up-to-date hardware and software.

The following features are to be considered when selecting a device, and associated equipment:

- 1) **Safety:** The equipment is to be rated for the intended environment where it will be

operated. Construction materials and design are to be compatible with (and not hazardous for) the environment where the inspection area is located. Particular attention is to be paid to the possible malfunctioning of the equipment and the possible consequences.

- 2) **Data Acquisition:** The equipment should be provided with suitable systems allowing the acquisition of data adequate for the inspection being carried out. All data should be of adequate quality and should be recorded and stored in a manner so that suitable data security (i.e. confidentiality, integrity and availability of data) is ensured to an acceptable level.
- 3) **Communication:** The equipment should be designed to provide and maintain an adequate and safe communication with the operator when required. The data transmission should be stable and safe in order to ensure an adequate level of confidentiality, integrity and availability of the data transmitted.
- 4) **Data recording and storage:** The data recording methods, media and procedures should ensure at least the same level of data security obtained during data acquisition and transmission, in order not to lower the level of data quality and information content. The data storage methods, media and procedures should ensure at least the same level of data security obtained during data acquisition, transmission and recording.
- 5) **Reporting:** The equipment should be able to produce human-readable reports in a format that is readable by means of commercial software usually installed on PCs (e.g. PDF format).

4 PROCEDURES AND GUIDELINES

The Supplier is to have documented operational procedures and guidelines on how to plan, carry out and report testing and inspection activities; how to handle/operate equipment and how to collect and store data.

The operational procedures are also to consider the relevant Tasneef requirements and are to deal with at least the following:

- 1) Safety requirements regulating access onboard
- 2) Preparation for the work onboard
- 3) Definition and identification of the systems and networks to be inspected

Annex 1 - Firms engaged in testing cyber resilience of ships

- 4) Systems preparation, as applicable
- 5) Verification of operational efficiency and operation of equipment and tools
- 6) Two-way communication between operator, Surveyor and other personnel such as support staff and ships officers and crew
- 7) How to provide to the attending Surveyor all the necessary assistance required during inspections, including carrying out the checks required by the Surveyor in charge and follow his/her instructions.

5 REPORTING

The Supplier is to demonstrate ability to provide reports on the activities carried out and results obtained in a format suitable for use by the attending Surveyor, e.g. by means of reports containing at least an executive summary with narrative descriptions of the findings and other sections with relevant details.

6 DISCLAIMER

It is understood that compliance with the provisions of prevailing law and accident prevention is the exclusive responsibility of the interested parties and does not concern Tasneef in any way.