



TUVALU SHIP REGISTRY

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MARINE CIRCULAR

MC-2/2008/11/12/4

10/2021

FOR: Ship Owners, Ship Managers, Ship Operators, Ship Masters, Ship Officers, Classification Societies

SUBJECT: LONG RANGE IDENTIFICATION AND TRACKING OF SHIPS (LRIT)

DEFINITIONS:

The following abbreviations stand for:

- "AIS" – Automatic Identification System
- "ASP" – Application Service Provider
- "CSO" – Company Security Officer
- "CSP" – Communication Service Provider
- "CSSC" – Cargo Ship Safety Certificate
- "CSSEC" – Cargo Ship Safety Equipment Certificate
- "CT" – Conformance Test
- "CTR" – Conformance Test Report
- "DC" – Data Centre
- "DPA" – Designated Person Ashore
- "GMDSS" – Global Maritime Distress and Safety System
- "GT" – Gross Tonnage in accordance to ITC 69
- "IMO" – International Maritime Organization
- "IMSO" – International Maritime Satellite Organization
- "ITC 69" – International Convention on the Tonnage Measurement of Ships, 1969
- "LRIT" – Long Range Identification and Tracking of Ships
- "MMSI" – Maritime Mobile Service Identity
- "MODU" – Mobile Offshore Drilling Unit
- "PSSC" – Passenger Ship Safety Certificate
- "RO" – Recognized Organization as defined by IMO Resolution A.789(19).
- "SAR" – Search and Rescue
- "SOLAS" – International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended
- "SSAS" – Ship Security Alert System
- "VMS" – Vessel Monitoring System

The following terms shall mean:

- "Administration" – Tuvalu Ship Registry
- "Regulation" – SOLAS Chapter V Reg 19-1 as established by IMO Resolution MSC.202(81) unless otherwise specified
- "Ship" – when used throughout this Marine Circular shall include all the ship types mentioned under the section on "APPLICATION" below

PURPOSE:

This Marine Circular provides the LRIT requirements for Tuvalu flagged ships.

REFERENCES:

- (a) IMO Resolution MSC.263(84) - Revised Performance Standards and Functional Requirements for the Long-Range Identification and Tracking of Ships, dated 16 May 2008, as amended by IMO Resolutions MSC.330(90), adopted 25 May 2012, and MSC.400(95), adopted 08 June 2015
- (b) IMO Resolution A.694(17) - General Requirements for Shipborne Radio Equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids, adopted 06 November 1991
- (c) IMO Resolution A.813(19) - General requirements for electromagnetic compatibility of all electrical and electronic ship's equipment, adopted 23 November 1995
- (d) IMO Circular MSC.1/Circ.1290, as amended - Unified Interpretation of the Term "First Survey". Dated 16 December 2008
- (e) IMO Circular MSC.1/Circ.1295 - Guidance in Relation to Certain Types of Ships which are Required to Transmit LRIT Information on Exemptions and Equivalents and on Certain Operational Matters, dated 8 December 2008
- (f) IMO Circular MSC.1/Circ.1298 - Guidance on the Implementation of the LRIT System, dated 8 December 2008
- (g) IMO Circular MSC.1/Circ.1307 - Guidance on the Survey and Certification of Compliance of Ships with the Requirement to Transmit LRIT Information, date 09 June 2009
- (h) IMO Circular GMDSS.1/Circ.17 - Master Plan of Shore-Based Facilities for the Global Maritime Distress and Safety System (GMDSS Master Plan), dated 04 March 2015

APPLICATION:

SOLAS V/19-1 establishes the requirements for ship to transmit LRIT information as well as the rights and obligations of Contracting Governments and of SAR services to receive that LRIT information.

SOLAS V/19-1 applies to the following ships engaged on international voyages:

- (a) All passenger ships, including high-speed passenger craft, of any GT;
- (b) Cargo ships, including high-speed craft, of 300 GT and upwards;
- (c) Self-propelled MODUs not on location; and
- (d) Commercial yachts of 300 GT and upwards.

Note: A rigidly connected composite unit of a pushing vessel and associated pushed vessel, when designed as a dedicated and integrated tug and barge (ITB) combination, shall be regarded as a single ship for the purpose of this Regulation.

CONTENTS:

1. General Requirements

Ships constructed (as defined in SOLAS V/2) on or after 31 December 2008 shall comply with LRIT when the ship is put into service.

2. Sea Areas of Operation

- 2.1. Refer to the GMDSS Master Plan Annexes 2, 3 and 4 for detailed descriptions of sea areas.
- 2.2. Ships operating exclusively in sea area A1 and fitted with an AIS do not need to comply with SOLAS V/19-1.
- 2.3. Ships operating in near-coastal sea area A2 not fitted with Inmarsat-C GMDSS are required to fit a LRIT compliant terminal.

- 2.4. Ships operating in sea area A3 require compliant shipborne equipment to serve as a LRIT terminal.
- 2.5. Ships operating in polar sea area A4 above 76 degrees North and South latitudes require a non-Inmarsat terminal that operates in conjunction with a low-earth orbit CSP system approved by the Administration in conjunction with its appointed ASP. An example of an acceptable system is the Iridium system.

3. Authorized LRIT Conformance Test ASPs

- 3.1. The following companies have been appointed by the Administration as testing ASPs in accordance to MSC.1/Circ.1307 to issue LRIT CTRs on behalf of the Administration:
 - 3.1.1. Collecte Localisation Satellites (CLS) – Email: irit.testing@cls.fr;
 - 3.1.2. Fulcrum Maritime Systems Limited – Email: asptesting@fulcrum-maritime.com; and
 - 3.1.3. MCS (FE) Pte Ltd (MCS) – Email: irit@maritimecomms.com;
 - 3.1.4. Pole Star Space Applications Limited – Email: irittesting@polestarglobal.com
- 3.2. Shipowners and operators are advised to contact any of the ASPs to discuss LRIT terminal requirements to ensure shipborne terminals are LRIT compliant, e.g. in the event that the conformance testing has determined that the nominated terminal is non-compliant, the testing ASPs may be prepared to provide a quotation for a compliant terminal and, if required, to make arrangements for the necessary delivery, installation and activation via their global network of agents.

4. LRIT Conformance Testing

- 4.1. LRIT conformance testing of shipborne terminals is mandatory as of 31 December 2008 in accordance with MSC.1/Circ.1307.
- 4.2. For ships constructed before 31 December 2008, the shipborne terminal LRIT CT shall be:
 - 4.2.1. conducted as soon as possible, but no less than 3 months prior to the date on which a ship would need to demonstrate compliance with the requirements of SOLAS V/19-1; and
 - 4.2.2. satisfactorily completed prior to the **Record of Equipment** being endorsed to document compliance with the requirements relating to the LRIT system.
- 4.3. For ships constructed on or after 31 December 2008, the shipborne LRIT CT shall be:
 - 4.3.1. conducted after the completion of the initial survey of the radio installation in accordance with the provisions of SOLAS I/7(a)(i) or I/9(a)(i), provided such survey has indicated that, as far as the radio installation is concerned, the ship meets the related requirements for the issuance of a PSSC, a CSSEC or a CSSC; and
 - 4.3.2. satisfactorily completed prior to the issuance of a PSSC, a CSSEC or a CSSC.
- 4.4. The LRIT conformance testing program typically lasts from 30 to 48 hours from operational activation.
- 4.5. On satisfactory completion of a shipborne terminal conformance test, the ASP conducting the test shall issue a LRIT CTR.

- 4.6. The Administration is aware that difficulties have been encountered when attempting to conduct conformance testing in certain parts of the world or in certain situations, e.g. when a ship is in shipyard during construction or undergoing repairs or modifications.
- 4.7. Where conformance testing cannot be completed due to circumstances mentioned above, ROs are to note that the inability to complete the conformance testing and carry a LRIT CTR in time for the “first survey” does not make the ship unseaworthy and should not be a reason for delaying the ship in port, provided that permission has been obtained from the Administration to authorize the RO to issue a Short Term PSSC / CSSEC / CSSC to the ship to allow time for the LRIT conformance test to be completed and/or the LRIT CTR to be delivered, subject to either of the following conditions:
 - 4.7.1. when the ship operator produces objective evidence to the this Administration or RO that efforts have already started to arrange shipborne terminal LRIT conformance testing;
 - 4.7.2. when the ship operator produces objective evidence of successful shipborne terminal LRIT conformance testing and application for the issuance of the LRIT CTR;
 - 4.7.3. when found necessary under newbuilding delivery circumstances; or
 - 4.7.4. when a vessel is in shipyard undergoing repairs or modifications when the “first survey” becomes due.
- 4.8. The provisions of SOLAS I/14(d) and I/14(e) shall apply as follows:
 - 4.8.1. If the ship, at the time when the relevant Short Term PSSC / CSSEC / CSSC expires, is not in a port in which it is to be surveyed, the Administration may consider extending the certificate, but such extension shall be granted only for the purpose of allowing the ship to complete its voyage to the port in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so.
 - 4.8.2. A ship to which an extension has been granted shall not, on its arrival in the port in which it is to be surveyed, be entitled by virtue of such extension to leave that port without having obtained the relevant Full Term PSSC / CSSEC / CSSC endorsed to indicate LRIT compliance or accompanied by a LRIT CRT, whichever applies.

5. LRIT Conformance Test Report (CTR)

- 5.1. The LRIT CTR shall be placed on board with copies provided to the ship’s DPA and the Administration for record keeping and database entry.
- 5.2. Depending on the ASP, the <Distinctive numbers or letters> field on a LRIT CTR may be either marked “N/A”, or inserted with the ship’s Call Sign or Official Number. The Administration has no objection on this variability as the ship can still be identified by the IMO and the MMSI numbers, both of which are stated on the CTR.
- 5.3. The LRIT CTR must remain with the ship’s documents for as long as the shipborne terminal is deemed compliant because it does not expire until such time as there may be reason to require the LRIT conformance test to be repeated and the LRIT CTR reissued. Such an occasion may be the result of, but may not be limited to, terminal upgrade or replacement; transfer of a terminal from one ship to another; changes in ship ownership and/or management, change of flag, Data Center and/or ASP.

6. Exemptions and Equivalents

The provisions of this section apply to all ships that are required to transmit LRIT information.

6.1. General

- 6.1.1. The Administration may consider invoking the provisions of SOLAS V/3.2 when granting any exemptions or equivalents relating to the provisions of SOLAS V/19-1.
- 6.1.2. Considerations granting exemptions or equivalents typically taking into account factors such as the maximum distance offshore, the length and nature of the voyage, the absence of general navigational hazards, etc.
- 6.1.3. Any exemptions or equivalents granted shall always be subject to the condition that the same is accepted by Contracting Government(s) that have jurisdiction over the port to which the ship is located or is proceeding to, and the Contracting Government(s) of the coast of which the ship might be navigating.
- 6.1.4. Notwithstanding any additional conditions which the Administration may stipulate when granting exemptions or equivalents from the requirement to transmit LRIT information, the ship concerned shall be required, in lieu of transmitting LRIT information, to either:
 - 6.1.4.1. provide a copy of the specific voyage or passage plan (refer to resolution A.893(21) on Guidelines for voyage planning) to the Contracting Government that has jurisdiction over the port or place to which the ship is proceeding or is located, and to the Contracting Governments of the coast(s) of which the ship might be navigating; or
 - 6.1.4.2. report its positions at regular intervals, to be determined by the Administration taking into account the specific voyage or passage plan, to the aforesaid Contracting Governments, if provided with the means for doing so.

6.2. Specific Cases for Exemption

- 6.2.1. Ships which are not normally engaged on international voyages but which, in exceptional circumstances, are required to undertake a single international voyage may be exempted from the requirement to transmit LRIT information, pursuant to the provisions of SOLAS I/4(a).
- 6.2.2. Ships fitted with AIS and operating exclusively within sea area A1, may, for the purpose of employment in another sea area, undertake a single voyage outside sea area A1 during the course of which it may be exempted from the requirement to transmit LRIT information.
- 6.2.3. Ships which may be granted, pursuant to the provisions of SOLAS IV/3.1 and IV/3.2.2, exemptions from the requirements of SOLAS IV/7 to IV/11 for a single voyage and not fitted with radio-communication or other shipborne equipment which may be used to transmit LRIT information, may be exempted from the requirement to transmit LRIT information during the course of such single voyages.
- 6.2.4. A ship experiencing terminal transmission failure should immediately notify the Administration and include their status in the advance Notice of Arrival (NOA) to port States. Reports of its position at regular intervals, to be determined by the Administration and the port State, should be made to the aforesaid port State authority, if provided with the means for doing so.

7. Operational Procedures Requiring Authorization from the Administration

- 7.1. Authorization from the Administration should be sought prior to the reduction or termination of the transmission of LRIT information.
- 7.2. Masters shall make an entry in the record of navigational activities and incidents maintained in accordance with SOLAS V/28 indicating the dates and times between which:
 - 7.2.1. the shipborne equipment is authorized to be switched off in cases where international agreements, rules or standards provide for the protection of navigational information (SOLAS V/19-1.7.1); and
 - 7.2.2. the frequency of transmission of LRIT information is authorized to be reduced or temporarily stopped, for e.g. when a ship is, undergoing repairs, modifications or conversions in drydock, standing by in port for extended periods awaiting berth or charter orders, or is going into a hot lay-up or cold lay-up for a long period (refer to paragraph 4.4.1 of IMO Resolution MSC.263(84).
- 7.3. Where the frequency of transmission of LRIT information is authorized to be reduced or temporarily stopped, permission shall also be obtained in advance as may be required from the Contracting Government within whose territory or jurisdiction the ship is located.

8. LRIT Architecture

- 8.1. The SOLAS amendment provides for Contracting Governments to be entitled to receive identification, position, and time reports from:
 - 8.1.1. Ships registered to that member flag State wherever the ship is located.
 - 8.1.2. Ships that have declared their intention to enter a port in a member State's territory.
 - 8.1.3. Ships passing within 1,000 nautical miles of the coastline of a member State's territory.
 - 8.1.4. Ships in an area where a SAR operation is underway.
- 8.2. The LRIT system consists of the shipborne LRIT information transmitting terminal, CSPs, ASPs, LRIT DCs, including any related VMSs, an International LRIT Data Exchange (IDE) and an IMO LRIT Data Distribution Plan (DDP).
- 8.3. LRIT information is to be provided to Contracting Governments and SAR Services entitled to receive the information, upon request, through a system of National (NDC), Regional (RDC), Co-operative (CDC) Data Centres, and an International LRIT Data Centre (IDC), using where necessary, the LRIT IDE all controlled by the DDP.
- 8.4. LRIT requires ships to automatically transmit the following information:
 - 8.4.1. Identity of the ship (IMO Number and Vessel Name);
 - 8.4.2. Position of the ship (latitude and longitude); and
 - 8.4.3. The date and time of the position report.
- 8.5. Systems and terminals used to meet the requirements of SOLAS V/19-1 must conform to performance standards and functional requirements not inferior to those adopted by IMO Resolution MSC.263(84), as amended.
- 8.6. All ships under Tuvalu flag shall transmit the LRIT information to the Tuvalu National DC.

- 8.7. Tuvalu flagged ships do not incur charges for transmitting LRIT information in accordance to SOLAS V/19-1 unless notified otherwise in the future.

9. Tuvalu National DC ASP

The Administration has, through a Contract of Agreement with MCS (FE) PTE LTD (MCS) (supported by POLE STAR SPACE APPLICATIONS LIMITED), authorized MCS to establish a secure National DC and assume the obligations of an ASP as required under the provisions of the Performance Standards established in conjunction with SOLAS V/19-1.

10. Type Approved Shipborne Terminal

Shipborne terminal elected to be used to transmit LRIT information shall be of a type approved by the Administration or a RO on its behalf (SOLAS V/19-1.6) which may be demonstrated by the terminal being:

- 10.1. of a type approved by the Administration in accordance with the provisions of SOLAS V/19.1 and section 4 of IMO Resolution MSC.263(84); or
- 10.2. of a type approved by the Administration as meeting the requirements of SOLAS IV/14, and satisfactorily completing a LRIT CT in accordance with the procedures and provisions set out in Appendix 1 of MSC.1/Circ.1307; or
- 10.3. of a type certified by the Administration as meeting the requirements of IEC 60945 (2002-08) and IEC 60945 Corr.1 (2008-04) on Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results, and satisfactorily completing an LRIT conformance test in accordance with the procedures and provisions set out in Appendix 1 of MSC.1/Circ.1307; or
- 10.4. of a type certified by the Administration as meeting the requirements of the provisions of SOLAS XI-2/6; and 1 of the following, whichever appropriately applies:
 - 10.4.1. resolution MSC.136(76) on Performance Standards for a SSAS; or
 - 10.4.2. resolution MSC.147(77) on Adoption of the Revised Performance Standards for a SSAS.

11. Shipborne Terminal Requirements

11.1. The shipborne terminal shall provide the functionality specified in Table I.

TABLE I

Parameter	Data to be transmitted from the shipborne terminal
Shipborne Terminal Identifier	The identifier used by the shipborne terminal.
Positional Data	<p>The GNSS position (latitude and longitude) of the ship (based on the WGS84 datum).</p> <p>Position: The terminal should be capable of transmitting the GNSS position (latitude and longitude) of the ship (based on WGS84 datum) as prescribed by SOLAS V/19-1, without human interaction on board the ship.</p> <p>On-demand⁽¹⁾ position reports: The terminal should be capable of responding to a request to transmit LRIT information on demand without human interaction onboard the ship, irrespective of where the ship is located.</p> <p>Pre-scheduled⁽²⁾ position reports: The terminal should be capable of being remotely configured to transmit LRIT information at intervals ranging from a minimum of 15 minutes to periods of 6 hours to the LRIT DC, irrespective of where the ship is located and without human interaction on board the ship.</p>
Time Stamp 1	The date and time⁽³⁾ associated with the GNSS position: The terminal should be capable of transmitting the time associated with the GNSS position with each transmission of LRIT information.

Notes to Table 1:

⁽¹⁾ On-demand position reports means transmission of LRIT information as a result of either receipt of polling command or of remote configuration of the terminal so as to transmit at interval other than the preset ones.

⁽²⁾ Pre-scheduled position reports means transmission of LRIT information at the preset transmission intervals.

⁽³⁾ All times should be indicated as UTC.

11.2. In addition to the general requirements contained in Assembly resolution A.694(17) on “Recommendations on General Requirements for Shipborne Radio Equipment forming part of the GMDSS and for Electronic Navigational Aids”, the shipborne terminal should comply with the following minimum requirements:

11.2.1. be capable of being controlled and programmed by the Tuvalu National DC Administrator/ASP;

11.2.2. be capable of transmitting LRIT information following receipt of polling commands;

11.2.3. interface directly to the shipborne GNSS equipment, or have internal positioning capability;

11.2.4. be supplied with energy from the main and emergency source of electrical power⁽⁴⁾; and

11.2.5. be tested for electromagnetic compatibility taking into account the recommendations⁽⁵⁾ developed by the IMO.

Notes:

⁽⁴⁾ This provision should not apply to ships using for the transmission of LRIT information any of the radio communication equipment provided for compliance with the provisions of SOLAS IV. In such cases, the shipborne equipment should be provided with sources of energy as specified in SOLAS IV/13.

⁽⁵⁾ Refer to the IMO Assembly resolution A.813(19) on general requirements for electromagnetic compatibility of all electrical and electronic ship's equipment.

11.3. The shipborne terminal shall transmit the LRIT information using a CSP satellite communication system directly serving the Tuvalu National DC whereby all communication links from the terminal – satellite – CSP –ASP are direct and secure with no third party ASP involvement and provides coverage in all areas where the ship operates.

11.4. The shipborne terminal shall be set to automatically transmit the ship's LRIT information at 6-hour intervals to the Tuvalu National DC, unless an authorized LRIT Data User requesting the provision of LRIT information specifies a more frequent transmission interval.

12. Duplicate Equipment

Ships engaged on international voyages in sea areas A1, A2 and A3 or A1, A2, A3 and A4, which are using, for the purpose of transmitting LRIT information, the radiocommunication equipment fitted on board for the purpose of complying with the requirements of SOLAS IV and which, for the purpose of complying with the requirements of SOLAS IV/15.6 in relation to availability, are provided with duplicated equipment, shall use only one of the terminals as the primary terminal for LRIT. A duplicate terminal may be tested for compliance and used by the shipowner as a ready backup should the primary terminal develop problems.

13. Ship Security Alert System vs LRIT

The Administration agrees with the industry view that SSAS, with their primary purpose being that of security (SOLAS XI-2/6), should not, as far as possible, be used for other regulatory purposes. The rationale for this view is due to the nature of SSAS operation. The most effective and reliable SSASs are designed as a "closed system" that provide a totally secure system with its programming and data use exclusively under the control of the associated equipment supplier and the CSO. In contrast, because the LRIT terminal must be remotely controlled and programmed by the ASP, the system must be an "open system."

14. Shipowner Obligations

14.1. The shipowner is to ensure provision of a type approved shipborne terminal.

14.2. Existing Inmarsat-C GMDSS terminals will in most cases be type approved. However, shipowners should be aware that there is a 20-25% probability that existing Inmarsat-C GMDSS terminals will not conform to the Performance Standards and Functional Requirements for a range of operational, physical and technical reasons, including:

14.2.1. uncontrolled in-port log-off and/or power-down procedures;

14.2.2. poor antenna mounting location;

14.2.3. satellite line-of-sight blockage by the ship's superstructure;

14.2.4. interference from the ship's radar;

14.2.5. external wide-area radio interference in certain locations; and

14.2.6. most crucially the inability to meet these requirements due to out-of-date software and/or unsupported hardware.

14.3. Terminal performance shall be as reliable as possible because of the serious consequences of non-compliance. The most reliable and appropriate measures to take to ensure full terminal compliance are to:

14.3.1. verify with the Tuvalu National DC ASP the compliance capabilities of the make and model of the shipborne terminal elected to be used for LRIT information transmission;

14.3.2. use a terminal that is designed to **“always be on”** and not capable of being reconfigured or disabled on board the vessel;

14.3.3. prevent, to the extent possible, interference by competing functions such as email, messaging or Enhanced Group Calling (EGC), communications; and/or

14.3.4. use an integrated Inmarsat Mini-C transceiver as the optimum terminal solution.

15. Change of Flag to Tuvalu

15.1. A ship transferring to Tuvalu holding a LRIT CTR issued by one of Tuvalu’s ASPs will be required to have the LRIT CTR re-issued by the ASP reflecting the new particulars of the ship but without requiring re-testing or altering the date of completion of the original conformance test.

15.2. In cases where the LRIT CTR is deemed to be no longer valid due to non-recognition by Tuvalu, then a new LRIT conformance test must be conducted by one of Tuvalu’s ASP and accompanied by the issuance of a new LRIT CTR prior to a RO issuing the applicable Full Term PSSC / CSSEC / CSSC.

Yours sincerely,

Deputy Registrar
Tuvalu Ship Registry