

**ANNEX 2**

**RESOLUTION MSC.264(84)  
(adopted on [...] May 2008)**

**REVISED PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS  
FOR THE LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.886(21) on Procedure for the adoption of, and amendments to, performance standards and technical specifications, by which the Assembly resolved that the function of adopting performance standards and technical specifications, as well as amendments thereto shall be performed by the Maritime Safety Committee,

RECALLING FURTHER the provisions of the new regulation V/19-1 of the International Convention for the Safety of Life at Sea, 1974, as amended (the Convention), relating to the long-range identification and tracking of ships,

ALSO RECALLING the Performance standards and functional requirements for the long-range identification and tracking of ships (the Performance standards) adopted by resolution MSC.210(81) and amended by resolution MSC.254(83),

RECOGNIZING the need to adopt certain amendments to the Performance standards,

HAVING CONSIDERED the recommendation made, at its eighty-fourth session,

1. ADOPTS the Revised Performance standards and functional requirements for the long-range identification and tracking of ships, set out in the Annex to the present resolution;
2. RECOMMENDS Contracting Governments to the Convention to ensure that:
  - .1 shipborne systems and equipment used to meet the requirements of regulation V/19-1 of the Convention conform to performance standards not inferior to those specified in the Annex to the present resolution;
  - .2 all Long-range identification and tracking (LRIT) Data Centres and the International LRIT Data Exchange conform to functional requirements not inferior to those specified in the Annex to the present resolution; and
  - .3 they promptly submit to the Organization and to the LRIT Data Centres the required information to enable the establishment and the continuous functioning of the LRIT system and that they update such information as and when changes occur;

3. AGREES to review and amend, in the light of experience gained as necessary, the Revised performance standards and functional requirements for the long-range identification and tracking of ships, set out in the Annex to the present resolution;

4. REVOKES resolutions MSC.210(81) and MSC.254(83).

ANNEX

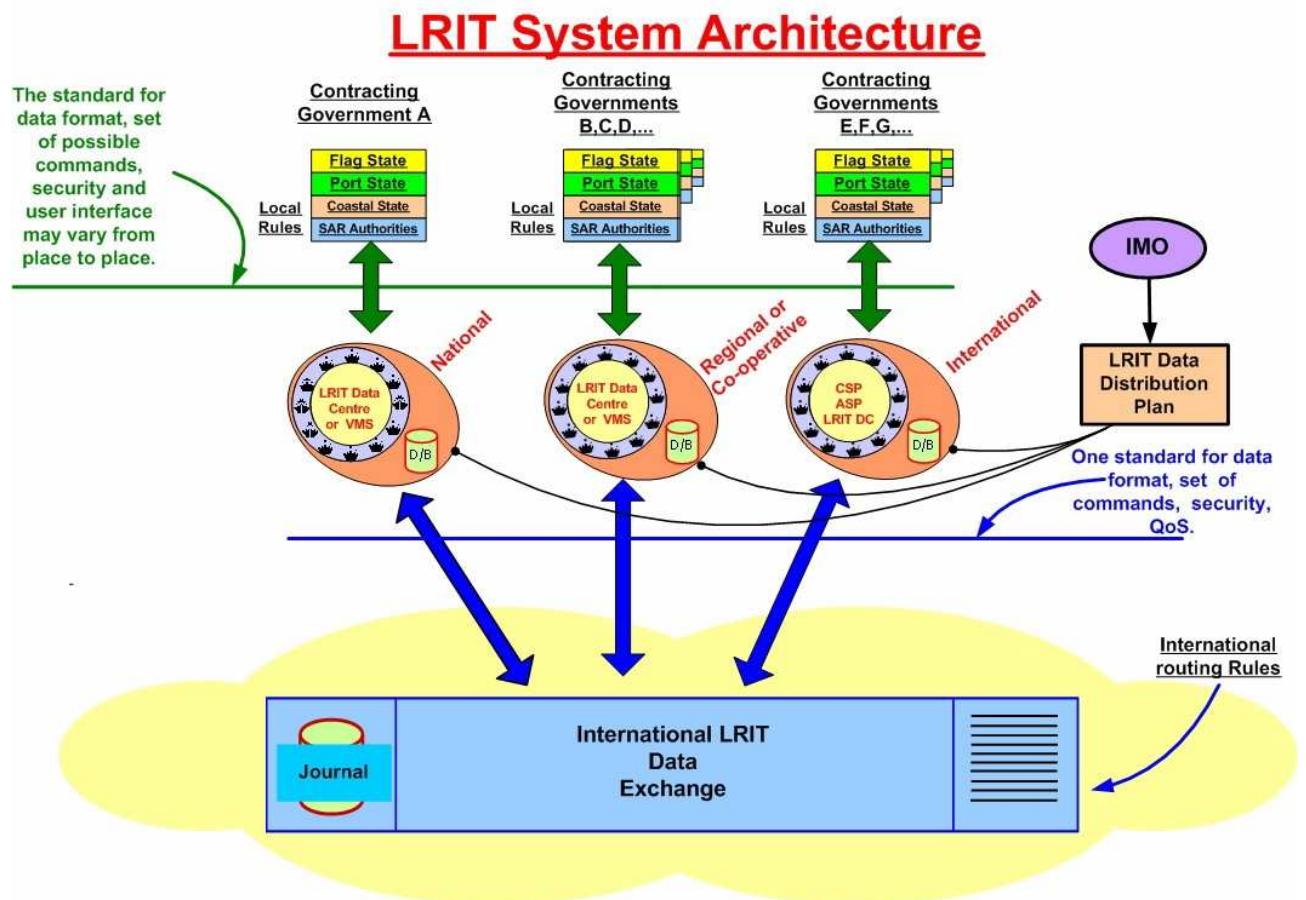
**REVISED PERFORMANCE STANDARDS AND FUNCTIONAL REQUIREMENTS  
FOR THE LONG-RANGE IDENTIFICATION AND TRACKING OF SHIPS**

**1 Overview**

1.1 The Long-Range Identification and Tracking (LRIT) system provides for the global identification and tracking of ships.

1.2 The LRIT system consists of the shipborne LRIT information transmitting equipment, the Communication Service Provider(s), the Application Service Provider(s), the LRIT Data Centre(s), including any related Vessel Monitoring System(s), the LRIT Data Distribution Plan and the International LRIT Data Exchange. Certain aspects of the performance of the LRIT system are reviewed or audited by an LRIT Coordinator acting on behalf of all Contracting Governments. Figure 1 provides an illustration of the LRIT system architecture.

**FIGURE 1**



*Note: The above figure would be, when the document is finalized, corrected to show that the international routing rules are in the DDP.*

1.3 LRIT information is provided to Contracting Governments and Search and rescue services<sup>1</sup> entitled to receive the information, upon request, through a system of National, Regional, Co-operative and International LRIT Data Centres, using where necessary, the International LRIT Data Exchange.

1.4 Each Administration should provide to the LRIT Data Centre it has selected, a list of the ships entitled to fly its flag, which are required to transmit LRIT information, together with other salient details and should update, without undue delay, such lists as and when changes occur. Ships should only transmit the LRIT information to the LRIT Data Centre selected by their Administration.

1.5 The obligations of ships to transmit LRIT information and the rights and obligations of Contracting Governments and of Search and rescue services to receive LRIT information are established in regulation V/19-1 of the 1974 SOLAS Convention.

## 2 Definitions

2.1 Unless expressly provided otherwise:

- .1 *Convention* means the International Convention for the Safety of Life at Sea, 1974, as amended.
- .2 *Regulation* means a regulation of the Convention.
- .3 *Chapter* means a chapter of the Convention.
- .4 *LRIT Data User* means a Contracting Government or a Search and rescue (SAR) service which opts to receive the LRIT information it is entitled to.
- .5 *Committee* means the Maritime Safety Committee.
- .6 *High-speed craft* means a craft as defined in regulation X/1.3.
- .7 *Mobile offshore drilling unit* means a mobile offshore drilling unit as defined in regulation XI-2/1.1.5.
- .8 *Organization* means the International Maritime Organization.
- .9 *Vessel Monitoring System* means a system established by a Contracting Government or a group of Contracting Governments to monitor the movements of the ships entitled to fly its or their flag. A Vessel Monitoring System may also collect from the ships information specified by the Contracting Government(s) which has established it.
- .10 *LRIT information* means the information specified in regulation V/19-1.5.

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<sup>1</sup> The term *search and rescue service* is defined in regulation V/2.5

2.2 The term “ship”, when used in the present Performance standards and functional requirements for long-range identification and tracking of ships (the Performance standards), includes mobile offshore drilling units and high-speed craft as specified in regulation V/19-1.4.1 and means a ship which is required to transmit LRIT information.

2.3 Terms not otherwise defined should have the same meaning as the meaning attributed to them in the Convention.

### **3 General provisions**

3.1 It should be noted that regulation V/19-1.1 provides that:

*Nothing in this regulation or the provisions performance standards and functional requirements adopted by the Organization in relation to the long-range identification and tracking of ships shall prejudice the rights, jurisdiction or obligations of States under international law, in particular, the legal regimes of the high seas, the exclusive economic zone, the contiguous zone, the territorial seas or the straits used for international navigation and archipelagic sea lanes.*

3.2 In operating the LRIT system, recognition should be given to international conventions, agreements, rules or standards that provide for the protection of navigational information.

3.3 The present performance standards should always be read together with regulation V/19-1 and the technical specifications for the LRIT system<sup>2</sup>.

### **4 Shipborne equipment**

4.1 In addition to the general requirements contained in resolution A.694(17) on Recommendations on general requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids, the shipborne equipment should comply with the following minimum requirements:

- .1 be capable of automatically and without human intervention on board the ship transmitting the ship’s LRIT information at 6-hour intervals to an LRIT Data Centre;
- .2 be capable of being configured remotely to transmit LRIT information at variable intervals;
- .3 be capable of transmitting LRIT information following receipt of polling commands;
- .4 interface directly to the shipborne global navigation satellite system equipment, or have internal positioning capability;

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<sup>2</sup> Refer to MSC.1/Circ.[...] on Interim revised technical specifications for the LRIT system.

- .5 be supplied with energy from the main and emergency source of electrical power<sup>3</sup>; and
- .6 be tested for electromagnetic compatibility taking into account the recommendations<sup>4</sup> developed by the Organization.

4.2 In addition to the provisions specified in paragraph 4.1 above, the shipborne equipment should provide the functionality specified in table 1.

**TABLE 1**  
**DATA TO BE TRANSMITTED FROM THE SHIPBORNE EQUIPMENT**

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

- Notes:
- <sup>(1)</sup> *On-demand position reports* means transmission of LRIT information as a result of either receipt of polling command or of remote configuration of the equipment so as to transmit at interval other than the preset ones.
  - <sup>(2)</sup> *Pre-scheduled position reports* means transmission of LRIT information at the preset transmit intervals.
  - <sup>(3)</sup> All times should be indicated as Universal Co-ordinated Time (UTC).

<sup>3</sup> 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 chapter IV. In such cases, the shipborne equipment should be provided with sources of energy as specified in regulation IV/13.

<sup>4</sup> Refer to resolution A.813(19) on General requirements for electromagnetic compatibility of all electrical and electronic ship's equipment.

4.3 The shipborne equipment should transmit the LRIT information using a communication system which provides coverage in all areas where the ship operates.

4.4 The shipborne equipment should be set to automatically transmit the ship's LRIT information at 6-hour intervals to the LRIT Data Centre identified by the Administration, unless the LRIT Data User requesting the provision of LRIT information specifies a more frequent transmission interval.

4.4.1 When a ship is undergoing repairs, modifications or conversions in dry-dock or in port or is laid up for a long period, the master or the Administration may reduce the frequency of the transmission LRIT information to one transmission every 24-hour period, or may temporarily stop the transmission of such information.

## **5 Application Service Providers**

5.1 Application Services Provider(s) (ASPs) providing services to:

- .1 a National LRIT Data Centre, should be recognized by the Contracting Government establishing the centre;
- .2 a Regional or a Co-operative LRIT Data Centre, should be recognized by the Contracting Governments establishing the centre. In such a case, the arrangements for recognizing the ASPs should be agreed amongst the Contracting Governments establishing the centre; and
- .3 an International LRIT Data Centre, should be recognized by the Committee.

5.2 Contracting Governments should provide to the Organization a list with the names and contact details of the ASPs they recognize together with any associated conditions of recognition and thereafter should, without undue delay, update the Organization as changes occur.

5.2.1 The Organization should communicate information it receives pursuant to the provisions of paragraph 5.2 and information in relation to the ASP(s) recognized by the Committee for providing services to the International LRIT Data Centre and any changes thereto to all Contracting Governments, all LRIT Data Centres, the International LRIT Data Exchange and the LRIT Coordinator.

5.3 An ASP function should:

- .1 provide a communication protocol interface between the Communication Service Providers and the LRIT Data Centre to enable the following minimum functionality:
  - .1 remote integration of the shipborne equipment into an LRIT Data Centre;
  - .2 automatic configuration of transmission of LRIT information;
  - .3 automatic modification of the interval of transmission of LRIT information;

- .4 automatic suspension of transmission of LRIT information;
- .5 on demand transmission of LRIT information; and
- .6 automatic recovery and management of transmission of LRIT information;
- .2 provide an integrated transaction management system for the monitoring of LRIT information throughput and routing; and
- .3 ensure that LRIT information is collected, stored and routed in a reliable and secure manner.

5.4 The ASP where used should add the data identified in table 2 to each transmission of LRIT information:

**TABLE 2**  
**DATA TO BE ADDED BY AN APPLICATION SERVICE PROVIDER**  
**AND AT THE LRIT DATA CENTRE**

Parameters	Comments
Ship Identity <sup>(1)</sup>	The IMO ship identification number <sup>(1)</sup> and MMSI for the ship.
Name of ship	Name of the ship which has transmitted the LRIT information in the English language using latin-1 alphabet and UTF-8 encoding.
Time Stamp 2	The date and time <sup>(2)</sup> the transmission of LRIT information is received by the ASP (if used).
Time Stamp 3	The date and time <sup>(2)</sup> the received LRIT information is forwarded from the ASP (if used) to the appropriate LRIT Data Centre.
LRIT Data Centre Identifier	The identity of the LRIT Data Centre to be clearly indicated by a Unique Identifier.
Time Stamp 4	The date and time <sup>(2)</sup> the LRIT information is received by the LRIT Data Centre.
Time Stamp 5	The date and time <sup>(2)</sup> the transmission of LRIT information is forwarded from the LRIT Data Centre to an LRIT Data User.

Notes: <sup>(1)</sup> See regulation XI-1/3 and resolution A.600(15) on IMO ship identification number scheme.

<sup>(2)</sup> All times should be indicated as Universal Co-ordinated Time (UTC).

5.5 In addition to the provisions of paragraph 5.3, Administrations, Contracting Governments and the Committee may establish, in relation to the ASPs seeking their recognition, specific requirements as a condition of recognizing a particular ASP.



## **6 Communications Service Providers**

6.1 Communications Service Providers (CSPs) provide services which link the various parts of the LRIT system using communications protocols in order to ensure the end-to-end secure transfer of the LRIT information. This requirement precludes the use of non-secure broadcast systems.

6.2 A CSP may also provide services as an ASP.

## **7 LRIT Data Centre**

7.1 All LRIT Data Centres should:

- .1 establish and continuously maintain systems which ensure, at all times, that LRIT Data Users are only provided with the LRIT information they are entitled to receive as specified in regulation V/19-1;
- .2 collect LRIT information from ships instructed by their Administrations to transmit the LRIT information to the centre;
- .3 obtain, when requested to provide LRIT information transmitted by ships other than those which transmit the information to the centre, LRIT information from other LRIT Data Centres through the International LRIT Data Exchange;
- .4 make available, when requested to provide LRIT information transmitted by ships other than those which transmit the information to the centre, LRIT information transmitted to the centre to other LRIT Data Centres through the International LRIT Data Exchange;
- .5 execute requests received from LRIT Data Users for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships transmitting the information to the centre;
- .6 relay, when required, requests received from LRIT Data Users through the International LRIT Data Exchange to the other LRIT Data Centres for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships not transmitting the information to the centre;
- .7 execute requests received through the International LRIT Data Exchange from other LRIT Data Centres for polling of LRIT information or for change(s) in the interval(s) of transmission of LRIT information by a ship or a group of ships transmitting the information to the centre;
- .8 upon request disseminate to LRIT Data Users the LRIT information they are entitled to receive in accordance with the agreed arrangements and notify the LRIT Data User and the Administration when a particular ship stops transmitting LRIT information;
- .9 archive LRIT information from ships which transmit the information to the centre, for at least one year and until such time as the Committee reviews and accepts the annual report of the audit of its performance by the LRIT Coordinator. However,

the archived LRIT information should provide a complete record of the activities of the centre between two consecutive annual audits of its performance;

- .10 for LRIT information archived within the last 4 days, send the LRIT information within 30 min of receiving a request;
- .11 for LRIT information archived between 4 and 30 days previously, send the LRIT information within 1 h of receiving a request;
- .12 for LRIT information archived more than 30 days previously, send the LRIT information within 5 days of receiving a request;
- .13 ensure using appropriate hardware and software, that LRIT information is backed-up at regular intervals, stored at suitable off-site location(s) and available as soon as possible in the event of disruption to ensure continuity of service;
- .14 maintain a record of the ships which transmit LRIT information to the centre including name of ship, IMO Ship identification number, call sign and Maritime Mobile Service Identity (MMSI);
- .15 use a standard protocol for communications and agreed protocols to connect with the International LRIT Data Exchange and the LRIT Data Distribution Plan server;
- .16 use a standard secure transmission method with the International LRIT Data Exchange and the LRIT Data Distribution Plan server;
- .17 use a secure authentication method with LRIT Data Users;
- .18 use a standard and expandable message format for communicating with the International LRIT Data Exchange and the LRIT Data Distribution Plan server;
- .19 use reliable connections (e.g. TCP) to ensure that the LRIT information is successfully received by the LRIT Data Centres;
- .20 add the appropriate data identified in table 2 to each transmission of LRIT information collect by the centre; and
- .21 have access to the current LRIT Data Distribution Plan and to earlier versions of the plan.

7.2 All LRIT Data Centres should comply with the relevant provisions of the Technical specifications for communications within the LRIT system<sup>5</sup> and of the Technical specifications for the LRIT Data Distribution Plan and should take into account the relevant provisions of the Technical specifications for the International LRIT Data Exchange.

7.3 All Regional or Co-operative LRIT Data Centres and the International LRIT Data Centre should automatically maintain journal(s) for all of the internally routed LRIT information. The

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<sup>5</sup> Refer to MSC.1/Circ.[...] on Interim revised technical specifications for the LRIT system.

journal(s) should only contain message header information which should be used for audit and invoicing purposes. The journal(s) should be transmitted to the International LRIT Data Exchange at regular intervals in order to be combined with the journal(s) maintained by the International LRIT Data Exchange.

7.4 Each LRIT Data Centre should:

- .1 settle its financial obligations *vis-à-vis* the LRIT Data Centres which provide to it LRIT information and the International LRIT Data Exchange in a timely manner in accordance with the arrangements they have agreed;
- .2 publish its charges, in a currency to be decided by the Contracting Government(s) establishing the centre and in Special Drawing Rights (SDR) together with the date(s) as from which the charges are effective, for:
  - .1 providing LRIT information transmitted by the shipborne equipment at preset intervals<sup>6,7</sup>;
  - .2 providing LRIT information transmitted by the shipborne equipment on demand<sup>8</sup>;
  - .3 remotely configuring the shipborne equipment so as to transmit at interval other than the preset<sup>9</sup> ones and for resetting the shipborne equipment to transmit at preset interval; and
  - .4 providing archived LRIT information which is the LRIT information received from a ship other than the last one;

and should update these as and when changes occur; and

- .3 transmit to the International LRIT Data Exchange information on its charges together with the currency they relate to and should update such information as and when changes occur.

7.5 The performance of all LRIT Data Centres should be audited by the LRIT Coordinator.

7.5.1 All LRIT Data Centres should co-operate and make available to the LRIT Coordinator the information required to enable the satisfactory completion of an audit of their performance.

7.5.2 All LRIT Data Centres should settle their financial obligations *vis-à-vis* the LRIT Coordinator in a timely manner in accordance with the arrangements they have agreed.

7.6 When providing LRIT information to LRIT Data Users, other than to a SAR service, LRIT Data Centres should:

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<sup>6</sup> Refer to pre-scheduled position reports as defined in Note (2) in Table 1.

<sup>7</sup> Preset intervals are the intervals specified in paragraph 4.4.

<sup>8</sup> Refer to on demand reports as defined in Note (1) in Table 1.

<sup>9</sup> Preset intervals are the intervals specified in paragraph 4.4.

- .1 in case such information are not archived, utilize the current version of the LRIT Data Distribution Plan;
- .2 in case such information are archived, utilize the version(s) of the LRIT Data Distribution Plan which were applicable at the time the archived LRIT information requested were originally received; and
- .3 apply the geographical areas specified by the Contracting Governments concerned in the LRIT Data Distribution Plan and should not endeavour to resolve any issues which may arise when such areas are either not specified or overlap geographical areas specified by other Contracting Governments.

7.7 Notwithstanding the provisions of paragraph 7.1 and subject to the provisions of paragraph 17.2, all LRIT Data Centres should provide to SAR services, LRIT information transmitted by all ships located within the geographical area specified by the SAR service requesting the information so as to permit the rapid identification of ships which may be called upon to provide assistance in relation to the search and rescue of persons in distress at sea. The LRIT information should be provided irrespective of the location of the geographical area and should be provided even if the geographical area is outside the search and rescue region associated with the SAR service requesting the information (regulation V/19-1.12 refers).

## **8 National, Regional and Co-operative LRIT Data Centres**

8.1 A Contracting Government may establish a National LRIT Data Centre. A Contracting Government establishing such a centre should provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.2 A group of Contracting Governments may establish either a Regional or a Co-operative LRIT Data Centre. The arrangements for establishing such a centre should be agreed amongst the Contracting Governments concerned. One of the Contracting Governments establishing such a centre should provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.3 Upon request, National, Regional and Co-operative LRIT Data Centres may provide services to Contracting Governments other than those establishing the centre.

8.3.1 The arrangements for providing services should be agreed between the LRIT Data Centre and the Contracting Government requesting the provision of the services.

8.3.2 The Contracting Government establishing the National LRIT Data Centre or one of the Contracting Governments establishing the Regional or Co-operative LRIT Data Centre should, if the centre provides services to Contracting Governments other than those which established the centre, provide relevant details to the Organization and thereafter should, without undue delay, update the information provided as and when changes occur.

8.4 National, Regional and Co-operative LRIT Data Centres may also serve as a National, Regional or Co-operative Vessel Monitoring System (VMS) and may require, as VMS, the transmission from ships of additional information, or of information at different intervals, or of

information from ships which are not required to transmit LRIT information. VMSs may also perform other functions.

8.4.1 If a National, Regional or Co-operative LRIT Data Centre collects additional information from ships, it should transmit only the required LRIT information to the other LRIT Data Centres through the International LRIT Data Exchange.

## **9 International LRIT Data Centre**

9.1 An International LRIT Data Centre recognized by the Committee should be established.

9.2 Contracting Governments not participating in a National, Regional or Co-operative LRIT Data Centre, or Contracting Governments having an interest in the establishment of an International LRIT Data Centre should co-operate, under the co-ordination of the Committee, with a view to ensuring its establishment.

9.3 Ships, other than those which are required to transmit LRIT information to either a National, Regional or Co-operative LRIT Data Centre, should transmit the required LRIT information to the International LRIT Data Centre.

9.4 An International LRIT Data Centre may, upon request, collect additional information from ships entitled to fly the flag of an Administration on the basis of specific arrangements concluded with the Administration concerned.

9.6 In addition to the provisions of section 7, the International LRIT Data Centre should comply with the provisions of the Technical specifications for the International LRIT Data Centre<sup>10</sup>.

## **10 International LRIT Data Exchange**

10.1 An International LRIT Data Exchange recognized by the Committee should be established.

10.2 Contracting Governments should co-operate, under the co-ordination of the Committee, with a view to ensuring the establishment of the International LRIT Data Exchange.

10.3 The International LRIT Data Exchange should:

- .1 route LRIT information between LRIT Data Centres using the information provided in the LRIT Data Distribution Plan;
- .2 be connected to all LRIT Data Centres and the LRIT Data Distribution Plan server;
- .3 use a store and forward-buffer to ensure LRIT information is received;
- .4 automatically maintain journal(s) containing message header information only which may be used for:
  - .1 invoicing functions and settlement of invoicing disputes; and

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<sup>10</sup> Refer to MSC.1/Circ.[...] on Interim revised technical specifications for the LRIT system.

- .2 audit purposes;
- .5 archive journal(s), for at least one year and until such time as the Committee reviews and accepts the LRIT Coordinator's annual report of the audit of its performance. However, the archived journal(s) should provide a complete record of the activities of the exchange between two consecutive annual audits of its performance;
- .6 receive journal(s) from Regional, Co-operative, and the International LRIT Data Centre and combine these journal(s) with its own journal(s);
- .7 prepare, as necessary, performance related statistical information based on the information contained in the journal(s);
- .8 use a standard protocol for communications agreed protocols to connect to with LRIT Data Centres and the LRIT Data Distribution Plan server;
- .9 use a standard secure access method with the LRIT Data Centres and the LRIT Data Distribution Plan server;
- .10 use a standard and expandable message format for communicating with the LRIT Data Centres and the LRIT Data Distribution Plan server;
- .11 use reliable connections (e.g. TCP) to ensure that the LRIT information is successfully received by the LRIT Data Centres;
- .12 not have the capability to archive LRIT information;
- .13 not have the capability to view or access the LRIT information;
- .14 have access to current LRIT Data Distribution Plan and to earlier versions of the plan; and
- .15 receive information from LRIT Data Centres in relation to the charges they levy when providing LRIT information, create a master list of charges for all LRIT Data Centres and transmit the master list of charges to an LRIT Data Centre on request.

10.4 The International LRIT Data Exchange should comply with the provisions of the Technical specifications for the International LRIT Data Exchange<sup>11</sup> and with the relevant provisions of the Technical specifications for communications within the LRIT system and of the Technical specifications for the LRIT Data Distribution Plan.

10.5 The International LRIT Data Exchange should provide to:

- .1 the LRIT Coordinator off-line access to all journals; and

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<sup>11</sup> Refer to MSC.1/Circ.[...] on Interim revised technical specifications for the LRIT system.

- .2 Contracting Governments and LRIT Data Centres off-line access only to their share of the journals which relates to the LRIT information they have requested and were provided with.

10.6 The performance of the International LRIT Data Exchange should be audited by the LRIT Coordinator.

10.6.1 The International LRIT Data Exchange should co-operate and make available to the LRIT Coordinator the information required to enable the satisfactory completion of an audit of its performance.

10.6.2 The International LRIT Data Exchange should settle its financial obligations *vis-à-vis* the LRIT Coordinator in a timely manner in accordance with the arrangements they have agreed.]

## 11 LRIT Data Distribution Plan

11.1 The Organization should establish and maintain the LRIT Data Distribution Plan. The Organization should also host, build, operate and maintain the LRIT Data Distribution Plan server.

11.2 The LRIT Data Distribution Plan (the plan) should include:

- .1 a list indicating the unique LRIT identities of Contracting Governments, Search and rescue services entitled to receive LRIT information, LRIT Data Centres, the International LRIT Data Exchange, ASPs, the LRIT Data Distribution Plan server and the LRIT Coordinator;
- .2 for the purpose of the implementation of the provisions of regulation V/19-1.8.1, for each Contracting Government a list of geographical coordinates of points, taking into account the related provisions of the Technical specifications for the LRIT Data Distribution Plan<sup>12</sup>, based on the WGS 84 datum defining the geographical area:
  - .1 of the waters<sup>13</sup> landward of the baselines for measuring the breadth of the territorial sea of the Contracting Government concerned in accordance with international law;

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<sup>12</sup> Refer to MSC.1/Circ.[...] on Interim revised technical specifications for the LRIT system.

<sup>13</sup> The baselines for measuring the breadth of the territorial sea of the Contracting Government concerned in accordance with international law, the lines of delimitation between the Contracting Governments concerned and States with adjacent coasts and the coast of the Contracting Government concerned including any landward waters within which any ship which is required to comply with the provisions of regulation V/19-1 is able to navigate.

- .2 of the territorial sea<sup>14</sup> of the Contracting Government concerned in accordance with international law;
  - .3 between the coast of the Contracting Government concerned and a distance of 1,000 nautical miles from its coast. The Contracting Government concerned may, in lieu of defining the aforesaid area with reference to the geographical co-ordinate points defining its coast, define the area with reference to the geographical co-ordinate points of the baselines for measuring the breadth of the territorial sea of the Contracting Government concerned in accordance with international law; and
  - .4 within which the Contracting Government concerned is seeking the provision of LRIT information pursuant to the provisions of regulation V/19-1.8.1.3, if other than that defined under subparagraph .3 above;
- .3 for the purpose of the implementation of the provisions of regulation V/19-1.9.1 the following information:
- .1 the name of the Administration (together with its associated unique LRIT identity) which opts to exercise its right under the provisions of regulation V/19-1.9.1;
  - .2 the name(s) of the Contracting Government(s) (together with their associated unique LRIT identities) to which LRIT information about ships entitled to fly the flag of the aforesaid Administration shall not be provided pursuant to the provisions of paragraph V/19-1.8.1.3 together with the date and time as from which the decision of the Administration applies and any particulars thereof stated in the related communication to the Organization;
  - .3 in case of amendment, suspension or annulment such decisions of aforesaid Administration the salient details; and
  - .4 the date and time the Organization has received the related communication, including related amendment, suspension or annulment and the date and time the Organization has informed all Contracting Governments pursuant to the provisions of regulation V/19-1.9.2;
- .4 a list of ports and port facilities located within the territory and a list of places under jurisdiction of each Contracting Government together with the associated geographical co-ordinates of points (based on WGS 84 datum) in which ships that are required to comply with the provisions of regulation V/19-1 may enter or proceed to;

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<sup>14</sup> The baselines for measuring the breadth of the territorial sea and the outer limit of the territorial sea of the Contracting Government concerned in accordance with international law and the lines of delimitation of the territorial sea between the Contracting Governments concerned and States with opposite or adjacent coasts in accordance with international law.



- .5 a list indicating which LRIT Data Centre is collecting and archiving LRIT information for each of the Contracting Governments together with the related LRIT identifies;
- .6 a list indicating the Uniform Resource Locator/Uniform Resource Identifier (URL/URI) (Web Service Endpoint) of each LRIT Data Centre, the International LRIT Data Exchange and the LRIT Data Distribution Plan server;
- .7 a list indicating the ASPs providing services to each LRIT Data Centre together with the related LRIT identifies;
- .8 the contact details of Contracting Governments for LRIT-related matters;
- .9 the contact details of Search and rescue services entitled to receive LRIT information for LRIT-related matters;
- .10 information in relation to the ASPs recognized by each Contracting Governments together with any conditions attached to such recognitions, and their points of contact;
- .11 information in relation to each National, Regional and Co-operative LRIT Data Centre, the International LRIT Data Centre and the International LRIT Data Exchange, and their points of contact;
- .12 information in relation to the LRIT Coordinator, and its contact details;
- .13 information in relation to the LRIT Data Distribution Plan and its server and contact details of official(s) of the Organization who may be contacted for matters relating to the operation or maintenance of the plan or its server or for seeking help in relation to issues relating to or arising from the operation of the plan or its server; and
- .14 maintain a record of all previous versions of the plan together with the dates and times between which each version was in effect.

11.3 The LRIT Data Distribution Plan server should:

- .1 allow the International LRIT Data Exchange, the LRIT Data Centres and the LRIT Coordinator to have access to the current version of the plan;
- .2 provide earlier versions of the LRIT Data Distribution Plan to the International LRIT Data Exchange, the LRIT Data Centres and the LRIT Coordinator upon request;
- .3 use a standard protocol for communications and agreed protocols to connect with the International LRIT Data Exchange and the LRIT Data Centres;
- .4 use a standard secure transmission method with the International LRIT Data Exchange and the LRIT Data Centres;

- .5 use a standard and expandable message format for communicating with the International LRIT Data Exchange and the LRIT Data Centres;
- .6 use reliable connections (e.g., TCP) to ensure that the information in the plan is successfully received by the International LRIT Data Exchange and the LRIT Data Centres;
- .7 use industry standard file compression technology to reduce the size of the plan and its incremental updates when these are downloaded by the International LRIT Data Exchange and the LRIT Data Centres;
- .8 provide for the submission of the geographical areas in a standard industry format and use a consistent naming convention for the elements;
- .9 provide for uploading of the geographical areas in batch files in Geography Markup Language (GML) format;
- .10 maintain a unique number for each published version of the plan, incrementing each time a new version of the plan is published;
- .11 provide for the downloading of the plan and its incremental updates by the LRIT Data Centres and the International LRIT Data Exchange on the publishing of a new version of the plan;
- .12 archive all published versions of the plan and its incremental updates;
- .13 use a standard secure access methods with the Contracting Governments and the LRIT Coordinator; and
- .15 provide a web interface for the entry and amendment of information in the plan.

11.4 The LRIT Data Distribution Plan server should comply with the Technical specifications for LRIT Data Distribution Plan<sup>15</sup> and with the relevant provisions of the Technical specifications for communications within the LRIT system.

## **12 LRIT system security**

12.1 LRIT communications using land-line links should provide for data security using methods such as:

- .1 authorization: Access should only be granted to those who are authorized to see the specific LRIT information;
- .2 authentication: Any party exchanging information within the LRIT system should require authentication before exchanging information;

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<sup>15</sup> Refer to MSC.1/Circ.[...] on Interim revised technical specifications for the LRIT system.

- .3 confidentiality: Parties running an application server should protect the confidentiality of the LRIT information to ensure that it is not disclosed to unauthorized recipients when it travels across the LRIT system; and
- .4 integrity: Parties exchanging LRIT information should ensure that the integrity of the LRIT information is guaranteed and that no data has been altered.

### **13 LRIT system performance**

13.1 LRIT information should be available to an LRIT Data User within 15 min of the time it is transmitted by the ship.

13.2 On-demand LRIT information should be provided to an LRIT Data User within 30 min of the time the LRIT Data User requested the information.

13.3 The quality of service:

$$\frac{\text{Number of delivered LRIT information meeting latency requirements}}{\text{Total number of LRIT information requests}} \times 100\%$$

should be:

- .1 95% of the time over any 24-hour period; and
- .2 99% over any 1 month.

### **14 LRIT Coordinator**

14.1 The LRIT Coordinator should be appointed by the Committee.

14.2 The LRIT Coordinator should assist in the establishment of the International LRIT Data Centre and/or International LRIT Data Exchange by:

- .1 participating in the development of any new technical specifications for the LRIT system or of any amendments to existing ones taking into account the provisions of regulation V/19-1, the present performance standards, the existing technical specifications and any related decisions of the Committee;
- .2 issuing, when requested by the Committee, requests for the submission of proposals for the establishment and operation of the International LRIT Data Centre and/or the International LRIT Data Exchange;
- .3 evaluating the management, operational, technical and financial aspects of the proposals received taking into account the provisions of regulation V/19-1, the present performance standards, the technical specifications for the LRIT system and any other related decisions of the Committee and submitting its recommendations in this respect for consideration by the Committee; and
- .4 participating, as and when requested by the Committee, in their testing and integration into the LRIT system and reporting its findings in this respect for consideration by the Committee.

14.3 The LRIT Coordinator should, taking into account the provisions of regulation V/19-1, the present performance standards, the technical specification for the LRIT system and any related decisions of the Committee:

- .1 upon request, of any party concerned or the Committee, undertake the investigation of operational or technical disputes or invoicing difficulties and make recommendations for their settlement to the parties concerned and the Committee, as appropriate;
- .2 participate, as and when requested by the Committee, in the testing and integration of LRIT Data Centre(s) into the LRIT system and report its finding in this respect for consideration by the Committee; and
- .3 participate, as and when requested by the Committee, in the testing of new or modified procedures or arrangements for communications between the International LRIT Data Exchange, the LRIT Data Centres and the LRIT Data Distribution Plan server and report its finding in this respect for consideration by the Committee.

14.4 The LRIT Coordinator should undertake a review of the performance of the LRIT system taking into account the provisions of regulation V/19-1, the present performance standards, the technical specification for the LRIT system and any related decisions of the Committee and should report its findings to the Committee at least annually. In this respect, the LRIT Coordinator should on an annual basis:

- .1 review the performance of ASPs (or CSPs when they act as ASPs) providing services to the International LRIT Data Centre;
- .2 audit the performance of all LRIT Data Centres based on archived information and their fee structures;
- .3 audit the performance of the International LRIT Data Exchange and its fee structure, if any; and
- .4 verify that Contracting Governments and Search and rescue services receive only the LRIT information they have requested and are entitled to receive.

14.5 In addition to reporting to the Committee on the performance of the LRIT system including any identified non-conformities, the LRIT Coordinator may make recommendations to the Committee, based on an analysis of its findings, with a view to improving the efficiency, effectiveness and security of the LRIT system.

14.6 The LRIT Coordinator should, for the purpose of performing the functions specified in paragraphs 14.2.4 and 14.3 to 14.5:

- .1 be given the required level of access, by the LRIT Data Centres and the International LRIT Data Exchange, to management, and to charging, technical and operational data;

- .2 collect and analyse samples of LRIT information provided to LRIT Data Users;
- .3 collect and analyse statistics compiled by LRIT Data Centres and the International LRIT Data Exchange; and
- .4 be given access to the current LRIT Data Distribution Plan and to earlier versions of the plan.

14.7 The LRIT Coordinator should establish and communicate to the Committee the charges it would be levying in order to recover the expenditure it incurs for providing the services specified in paragraphs 14.2 to 14.5.

14.8 The related charges should be paid to the LRIT Coordinator in accordance with agreed arrangements - taking into account the laws of the Contracting Government(s) concerned - as follows:

- .1 in relation to the evaluation of proposals for the establishment of the International LRIT Data Centre and/or the International LRIT Data Exchange (paragraph 14.2.3), by those submitting the related proposals;
- .2 when participating in the testing and integration of the International LRIT Data Centre and/or the International LRIT Data Exchange into the LRIT system (paragraph 14.2.4), by the International LRIT Data Centre and/or the International LRIT Data Exchange as the case may be;
- .3 when undertaking the investigation of operational or technical disputes or invoicing difficulties (paragraph 14.3.1) by the party requesting the service;
- .4 when participating in the testing and integration of LRIT Data Centre(s) into the LRIT system (paragraph 14.3.2) by the LRIT Data Centre(s) being tested or integrated;
- .5 when participating in the testing of new or modified procedures or arrangements for communications between the International LRIT Data Exchange, the LRIT Data Centres and the LRIT Data Distribution Plan server (paragraph 14.3.3), by the International LRIT Data Exchange and/or the LRIT Data Centre(s);
- .6 when reviewing the performance of ASPs (or CSPs when they act as ASPs) providing services to the International LRIT Data Centre (paragraph 14.4.1), by the ASPs concerned;
- .7 when auditing the performance and fee structures of LRIT Data Centres (paragraph 14.4.2), by the LRIT Data Centre concerned; and
- .8 when auditing the performance and fee structure of the International LRIT Data Exchange (paragraph 14.4.3), by the International LRIT Data Exchange.

14.7.3 The Organization should not be required to make any payments to the LRIT Coordinator for any work the LRIT Coordinator may be required to carry out pursuant to any of the provisions of paragraphs 14.2 to 14.5; or for reporting or making recommendations to the Committee pursuant to any of the provisions of paragraphs 14.2 to 14.5.

14.7.4 Contracting Governments should not be responsible for making any [direct] payments to the LRIT Coordinator for the services it may be required to provide pursuant to any of the provisions of paragraphs 14.2 to 14.5. However, without prejudice as to the relations between Contracting Governments and the LRIT Data Centres the services of which may use, Contracting Governments may be required by LRIT Data Centres to pay fees for the LRIT information they request and receive which may contain elements to offset the charges paid by LRIT Data Centres to the LRIT Coordinator for the functions it performs. Notwithstanding the aforesaid, the Contracting Government which requests directly from the LRIT Coordinator the provision of a specific service should pay the LRIT Coordinator the relevant charges for the service it has requested.

## **15 Administrations**

15.1 Each Administration should decide to which LRIT Data Centre ships entitled to fly its flag are required to transmit LRIT information.

15.2 Each Administration should provide to the selected LRIT Data Centre the following information for each of the ships entitled to fly its flag which is required to transmit LRIT information:

- .1 name of ship;
- .2 IMO Ship identification number;
- .3 call sign; and
- .4 Maritime Mobile Service Identity.

15.3 Upon the transfer of the flag of a ship which is required to transmit LRIT information from another State, the Administration whose flag the ship is now entitled to fly should provide, without undue delay, to the selected LRIT Data Centre in addition to the information specified in paragraph 15.2 the following information:

- .1 the effective date and time (UTC) of transfer; and
- .2 the State whose flag the ship was formally entitled to fly, if known.

15.4 Administrations should, without undue delay, update the LRIT Data Centre as and when changes to the information they have provided under paragraphs 15.2 and 15.3 occur.

15.5 Upon the transfer of the flag of a ship which is required to transmit LRIT information to another State or when the ship is to be taken permanently out of service, the Contracting Government of the State whose flag the ship was entitled to fly hitherto should provide, without undue delay, to the LRIT Data Centre the following information:

- .1 name of ship;
- .2 IMO Ship identification number;

- .3 the effective date and time (UTC) of the transfer, or when the ship was, or will be, taken permanently out of service; and
- .4 the State to which the flag of the ship has been transferred, if known.

15.6 Administrations should either provide the ASP(s) they recognize with relevant information taking into account the provisions of 15.2 to 15.5 or should make the necessary arrangements for the aforesaid information to be provided to the ASP(s) concerned by the selected LRIT Data Centre.

## **16 Contracting Governments**

16.1 Each Contracting Government should:

- .1 obtain the LRIT information to which it is entitled to under the provisions of regulation V/19-1, and has requested, from the LRIT Data Centre designated under paragraph 15.1. Contracting Governments which have no ships entitled to fly their flag may receive the LRIT information they are entitled to under the provisions of regulation V/19-1 from any one of the LRIT Data Centres but should select one LRIT Data Centre from which they wish to receive the information. In such cases the Contracting Government concerned should, after reaching agreement with the LRIT Data Centre the services of which it would be using, inform accordingly the Organization and, without undue delay, update the information they have provided as and when changes;
- .2 if it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.8.1.1, indicate to the LRIT Data Centre the criteria for receiving such information. If so decided the Contracting Government may give the LRIT Data Centre a standing order regarding the criteria for receiving LRIT information;
- .3 if it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.8.1.2, indicate to the LRIT Data Centre the name and the IMO Ship identification number of the particular ship and either:
  - .1 the distance from a port; or
  - .2 a point in time,from when it requires the provision of LRIT information transmitted by the ship. If so decided the Contracting Government may give the LRIT Data Centre a standing order regarding the criteria for receiving LRIT information. If the standing order is a distance from a port, the Contracting Government also has to inform the centre of the name of the port each ship is proceeding to;
- .4 if it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.8.1.3, indicate the distance from its coast within which it requires the provision of LRIT information transmitted by ships. If so decided, the Contracting Government may give the LRIT Data Centre a standing order regarding the criteria for receiving LRIT information;

- .5 co-operate with a view of resolving any issues in connection with which flag a particular ship is entitled to fly; and
- .6 ensure either the destruction of all received LRIT information which is no longer in use or their archiving in a secure and protected manner.

16.2 In accordance with regulation V/19-1.8.2, Contracting Governments are obliged to communicate to the Organization and enter into the LRIT Data Distribution Plan the information specified in paragraph 11.2 and thereafter update such information as and when changes occur before requesting the provision of LRIT information pursuant to the provisions of regulation V/19-1.8.1.

16.3 Contracting Governments are advised that the LRIT system would not apply any restrictions pursuant to the provisions of either regulations V/19-1.8.2 and V/19-8.1.3 in relation to ships located within the waters landward of baselines or regulation V/19-18.1.4 in relation to ships located within territorial seas until such time that they have communicated to the Organization and provided in the LRIT Data Distribution Plan the required information.

## **17 Search and rescue services**

17.1 Subject to the provisions of paragraph 7.7, search and rescue service when it wishes to receive LRIT information pursuant to the provisions of regulation V/19-1.12 should indicate to the LRIT Data Centre the criteria for receiving such information.

17.2 A Search and rescue service should request the provision of LRIT information only via the LRIT Data Centre serving the Contracting Government in whose territory the service is located.

17.3 Subject to the provisions of the national legislation of the Contracting Government concerned, search and rescue services should provide information when requested by the LRIT Coordinator to enable the holistic review of the performance of the LRIT system and for the investigation of any disputes.

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