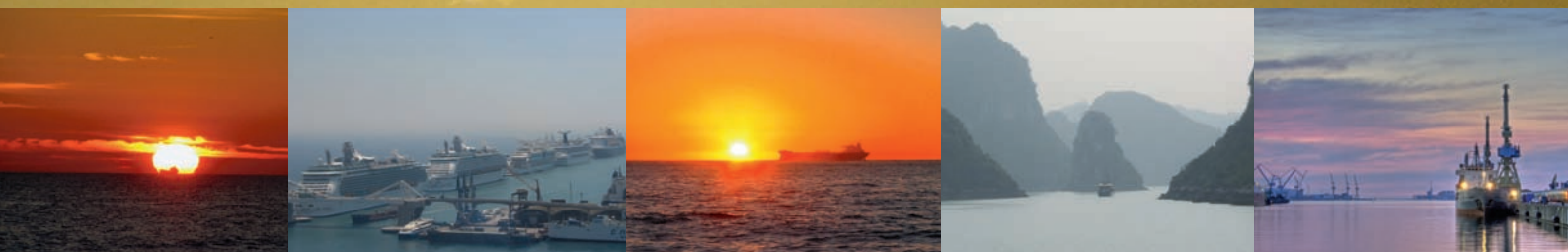




THE EU LONG RANGE  
IDENTIFICATION AND TRACKING  
OF SHIPS DATA CENTRE



THE EU LRIT DC

# THE INTERNATIONAL LRIT SYSTEM

The long-range identification and tracking (LRIT) (1) of ships aims to enhance security for government authorities. LRIT provides ship identity and current location information in sufficient time for a government to evaluate the security risk posed by a ship off its coast and to respond, if necessary, to reduce the risk.

An active and accurate long-range identification and tracking system also has potential maritime safety, marine environment protection, and maritime search and rescue benefits. Accurate information on the location of the ship in distress as well as ships in the vicinity that could lend assistance will save valuable response time to affect a timely rescue and perhaps minimise pollution along a coastline.

The LRIT system was set-up under the auspices of the International Maritime Organisation (IMO). It aims to provide a global system for the identification and tracking of ships that extends the monitoring of ships, beyond those areas covered by existing AIS (2) coastal networks (short range).

The LRIT system is mandatory for all passenger ships, high speed craft, mobile offshore drilling units and cargo ships of over 300 gross tonnes, and is in force from 1st July 2009.

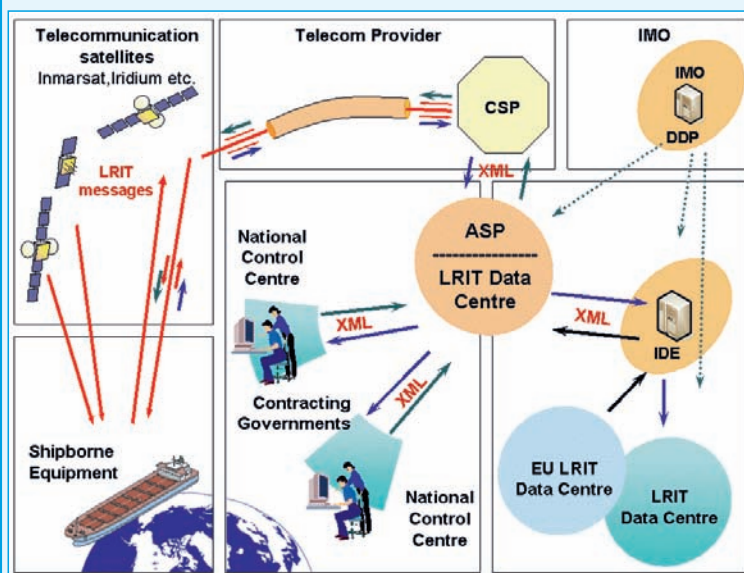
The system specifies that Flag States should ensure as a minimum that four position messages per ship per day (every 6 hours) are sent, stored, and are available for those actors entitled to access LRIT information.

Actors include the following:

- **Flag States** demanding information on the location of their vessels irrespective of their location;
- **Coastal States** may request information on ships up to 1000 Nm from their coasts irrespective of their flag;
- **Port States** may request information on those ships that have declared to have one of their ports as destination, irrespective of their location or flag (on receipt of the Notice of Arrival);
- **Search and Rescue authorities**.

The final working international LRIT system should receive, store and disseminate LRIT information on behalf of all SOLAS (1) Contracting Governments (3).

Figure 1. How LRIT works



**LRIT shipborne equipment:** transmits position information to the CSP (shipborne equipment).

**Communication Service Provider(s) (CSP):** provides the communication infrastructure and services to ensure the end-to-end secure transfer of the LRIT message between the ship and ASP.

**Application Service Provider(s) (ASP):** provides a communication protocol interface and adds information to the LRIT message between the CSP and the LRIT Data Centre.

**LRIT Data Centre(s):** collects and provides LRIT information to its users according to the DDP.

**LRIT Data Distribution Plan (DDP):** defines rules and access rights (i.e. which users can receive what LRIT info). The DDP Server is managed by IMO and is populated by SOLAS Contracting Governments, following IMO technical specifications.

**International LRIT Data Exchange (IDE):** routes LRIT information between LRIT Data Centres according to the DDP.

(1) On 19 May 2006, the International Maritime Organization (IMO) adopted Resolutions of the Marine Safety Committee MSC 202 (81) and MSC 211 (81) which state amendments to the International Convention of Safety of Life At Sea, (SOLAS), 1974, Regulation V/19-1 on LRIT and introduces the timely establishment of the Long-Range Identification and Tracking system (LRIT) for ships.

(2) Automatic Identification of Ships according to Directive 2002/59/EC.

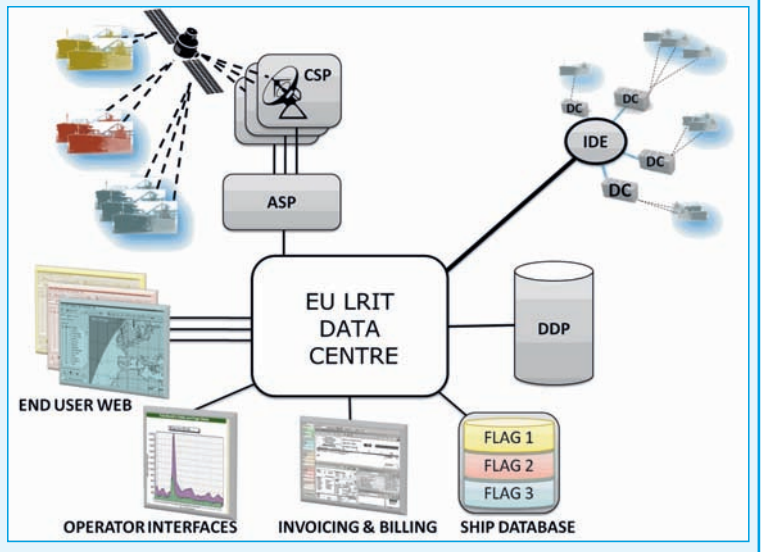
(3) Contracting Governments means Contracting Governments to the International Convention of Safety of Life At Sea (1974 SOLAS Convention).

# LAUNCHING THE EU LRIT DATA CENTRE

Figure 2. EU LRIT Data Centre Components

The general architecture of the EU LRIT system enables the links between the EU LRIT Data Centre and other components of the system such as the interfaces with the IDE, DDP, the EU LRIT Ship database, and Invoicing and Billing systems.

The Maritime Support Services will feature a state-of-the-art control centre at EMSA's premises in Lisbon.



## THE REQUIREMENT

In October 2007, the Council of Ministers adopted a Council Resolution, and agreed to set up of an EU Long Range Identification and Tracking of Ships (LRIT) Data Centre. The EU LRIT DC would be a combined effort of the European Flag States, to be managed by the European Commission, in cooperation with Member States, through EMSA. The Agency is in charge of the data centre's technical development, operation and maintenance.

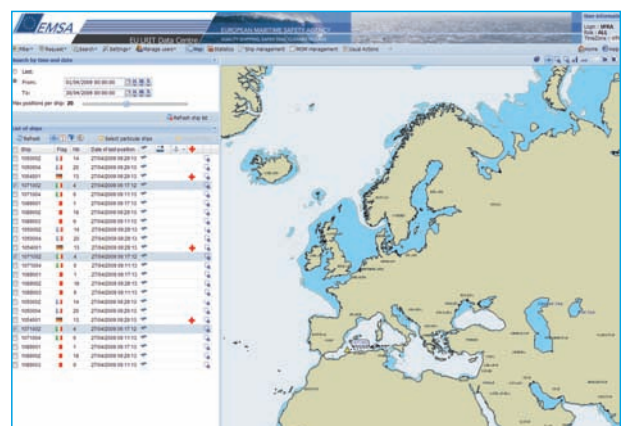
The EU LRIT DC is the biggest data centre of the whole international LRIT system. It tracks around 10,000 ships, which generate a minimum of 40,000 position reports per day. At present, there are 32 Member States, EFTA countries and Overseas Territories participating in the EU LRIT DC. This number is expected to increase if other third countries join in the future. The EU LRIT DC will therefore cover an estimated 20 to 25% of the world fleet subject to LRIT. In addition to tracking EU-flagged ships, the EU LRIT DC also provides Member States, on request, with the LRIT information of any third country vessel bound to, or sailing within, EU waters. So it is possible to track any ship within a 1,000 nautical mile zone of a participating state's coastline, no matter what flag the ship is flying.

## THE EU LRIT DATA CENTRE

The EU LRIT Data Centre enables the identification and tracking of ships belonging to European countries. It is an integral part of the wider International LRIT system. All Participating States share a common interface to the International Data Exchange (IDE), so it is also possible to request LRIT information on ships flying the flag of a non-EU country. This means that depending on the type of

user, a Participating State can consult the position of any ship that is in the vicinity of its coastline or that is bound for one of its ports.

In addition, all ships required to report to the EU LRIT DC are registered in a common EU LRIT Ship Database. This allows all Participating States to upload lists of ships and relevant details (e.g. IMO number, MSSI, call sign etc.). Only ships which have shipborne equipment which have successfully passed an LRIT Conformance Test or are Type Approved are allowed to be registered in the ship database. Once registered in the ship database, the vessels are visible within the EU Data Centre.



The web-based user interface of the EU LRIT DC

All types of users (Flag, Coastal, Port, or SAR) of the EU LRIT Data Centre have access to a web user interface to be able to consult position reports and request specific positions of ships. This interface also allows the ships to be viewed graphically, and users can also follow a particular ship or list of ships.

# THE FUTURE OF THE EU LRIT DATA CENTRE

EMSA has put in place an invoicing and billing system for the invoicing of costs associated to the use of the system and requesting of LRIT reports. This also enables the clearance of payments with other data centres worldwide. This system is operated by dedicated staff, who are responsible for the invoicing and financial management of the system. Certain aspects of the performance of the EU LRIT system, including this invoicing and billing system, will be reviewed or audited by an LRIT Co-ordinator, acting on behalf of all SOLAS Contracting Governments.

Throughout the development of the EU LRIT Data Centre, EMSA was in constant dialogue with the European Member States and Norway and Iceland. An EU LRIT Expert Group met quarterly to give valuable assistance, guidance and advice during the development of the project. This group will continue to exist in the form of a consultative expert group, to review progress of the EU LRIT Data Centre in the coming years, and provide feedback on modifications and updates to the system.

Prior to the EU LRIT Data Centre becoming operational, possible users of the EU LRIT System underwent training. Training sessions included a detailed training package, which will enable participants to train others in their government administrations to use the system.



Training session in April 2009 at EMSA in Lisbon

On an operational level, the Agency has also set up a Maritime Support Services (MSS) helpdesk for Member States. This supports both the LRIT and SafeSeaNet systems, and will cover other maritime applications in the future. The main tasks of the MSS are to monitor the EU LRIT system's performance, and to ensure a high level of availability and quality control. In addition, the MSS helpdesk will be the focal point for providing Search and Rescue data to assist requesting Member States. It will also facilitate the exchange of information with other LRIT data centres worldwide. MSS will operate around the clock from the second half of 2009.

## LOOKING AHEAD

The most significant future development which is envisaged for MSS is the integration of information from both SafeSeaNet and the EU LRIT Data Centre. The EU LRIT DC will be linked to the SafeSeaNet system, complementing SafeSeaNet's AIS data. Both short and long range information will therefore be linked. Data on ships, their cargo, and other aspects contained in EMSA's databases will be pooled. In addition, other applications such as CleanSeaNet (pollution monitoring) and THETIS (ship inspections) will be interlinked in the future.

The EU LRIT Data Centre is currently hosted by contractors, Collecte Localisation Satellite (CLS), in France. The Agency seeks to host the system in-house by 2011, in a shared environment with other maritime applications such as SafeSeaNet, CleanSeaNet and Thetis.

The ultimate aim is to have all EMSA applications hosted on a common platform in-house. Maritime Support Services will thus become a 'one-stop-shop', providing support to Participating States for all maritime applications operated by the Agency. This will be done through an integrated system, that provides Member States and the European Commission with a comprehensive image of vessel traffic in the European Union.

Figure 3. LRIT tracks ships on a global basis



Satellites enable ships to be tracked all over the world, even at very large distances from the coast. The system thus enhances existing modes of tracking ships using coast-based AIS stations.