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What is Electronic Chart Display and Information System (ECDIS)?

- The Electronic Chart Display and Information System (ECDIS) is a …… . With the use of the electronic chart system, it has become easier ……...
- The ECDIS utilises the feature of the Global Positioning System (GPS) to successfully …… .
- Because the GPS is a ----------, the utility and the ---------- of the ECDIS as an electronic chart system can never be doubted.
- It also has to be noted that the ECDIS adheres to the stipulations set by the ----------.

In addition to the GPS for pinpointing routes, the ECDIS also employs the systems of ---------- in order to facilitate better navigational application. The navigational routes are displayed incorporating of a system known as ----------.

Types of ECDIS

There are two different types of ECDIS and both are used in different sectors of marine areas, in spite of the technology involved being the same.

- **Vector ECDIS:** The vector variation of the electronic chart system is used mainly ……. The Vector ECDIS adheres to the norms set up by the International Hydrographic Organisation and is well advanced in the sense that, it can be pre-programmed to indicate ……...

- **Raster ECDIS:** These are a more traditional …….. In these, navigational charts that are charted out in paper are ……. format.
  Because of such a conversion, it so happens that if one wants to ……. a particular navigational route, the process is quite easy and feasible. For the purpose of display the navigational charts in this particular electronic

chart system, the …….. (RCDS) is used in case there is an absence of the Electronic Navigational Charts.

The concept of ECDIS is something that is gaining more and more popularity in today's times. This is mainly because the concept has been officially allowed to be incorporated in …….. By adopting this method of ……. navigational routes, it has become easier to avoid …… as this electronic chart system uses modern technology rather than …….

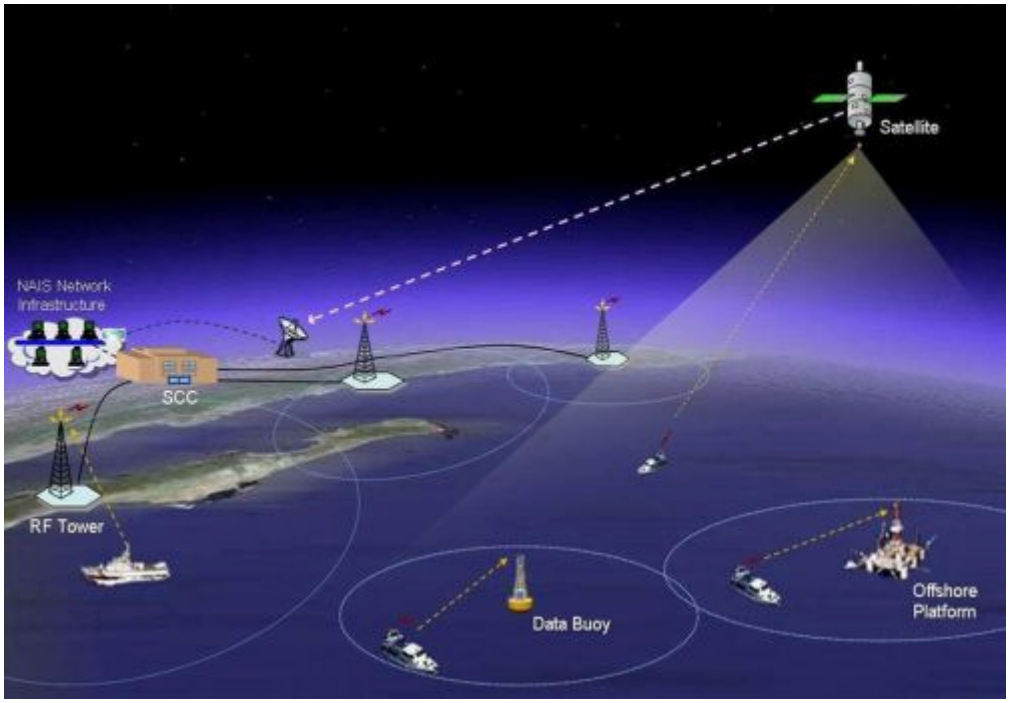
The ECDIS as an electronic Chart System is something that allows …….. a lot of mental …….. when it comes to the …….

Automatic Identification System (AIS): Integrating and Identifying Marine Communication Channels

- Automatic Identification System, more popularly known as AIS is a system which helps …….
- AIS uses VHF radio channels as ---------- to send and receive ……...
- AIS behaves as a radar and enables ships to……. and in the case of coast guards, aids them …….. .
- Additionally, it also helps in navigational purposes like ……. in case there are chances of any on-course collision between two ships.
- AIS also enables in sending ---------- so that ---------- can be carried out for the affected ship.
- Also, in cases where accidents have occurred and evidence needs to be found out about the last …… , it is the AIS that assists the authorities to find the required details.
- Just like the ---------- in an airplane, the AIS has managed to revolutionize and streamline marine travel, navigation and communication aspects.

In today's times, AIS ---------- many problems pertaining to the ----------of communication across the naval communication lines. By using normal communication channels VHF radios, AIS solves the problem to ---------- contemporary technology with the already existing ones. Also since the transmitting and receiving codes are ----------, it becomes quite evident as to which ship is transmitting or receiving signals thereby making matters of ---------- of the ship simple and uncomplicated.

Since marine rules stipulate that every ship …….. , it becomes easier and feasible for pinpointing the locations and routes taken by …….. This part becomes more relevant considering the ---------- and events that have occurred and are occurring in these past few years, because of the threat of ---------- and ---------- increasing more and more every day. Therefore with the usage of a device like AIS such complications can be avoided as coast guards can help shipmen ……...



Right now, it also has to be understood that AIS is ---------- by distance problems, in the sense that AIS is only ---------- for area of 74 km. But as more and more ships find the system to be useful and highly facilitative in their ---------- routes, the time is not far when AIS will encompass a ---------- than what it covers now. Already, it boasts of facilities like providing satellite ---------- and internet ---------- to enable a much better scope for the gadget's assistance.

AIS is the answer to all ---------- that were being caused while a ship was in the water and being an appropriate answer suiting all intents and purposes, the AIS technology is something that will evolve and develop as years progress by, making matters even more ---------- for the marine vessels and travelers in the days to come.

The Long Range Tracking and Identification (LRIT) System: Tracking and Monitoring Ships

The Long Range Tracking and Identification (LRIT) is an international tracking and identification system incorporated by ---------- under its ---------- to ensure a thorough tracking system for ships across the world.

It came into existence on the 19th May 2006 and was incorporated formally starting from January 2008. Based on these lines, those ships which were built on or following 31st December 2008 were required to have …….

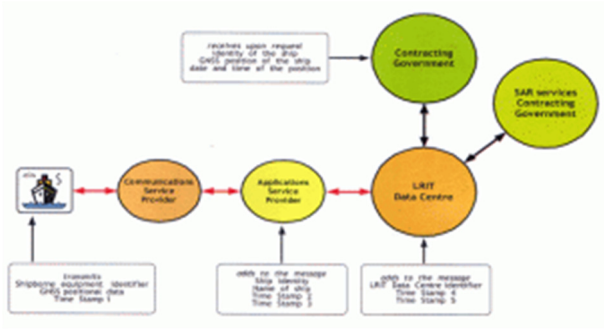
The vessel tracking system is a clear system that does not allow ……... In a similar manner, the tracking of ships system does not interfere ……...

As per the LRIT requirements, the ships that come under its purview are:

- All ships used for the purpose of ----------. Such a criteria includes even the faster and speedier ships
- All ---------- used for the purpose of drilling oil in the high seas
- All ships used for the purpose of ----------. This criterion also includes speedier vessels as also ships with a weight of over 300 gross tons

There are many countries which have incorporated the vessel tracking system as a part of their oceanic operation. Starting with the earliest, some of the countries can be listed down as follows:

- The most number of vessels that have adopted the LRIT system are from the Panama Flag Registry – around 8000 ships
- The European Union adopted the ship tracking system in the year 2007
- Canada became the first SOLAS nation to incorporate the system to track ships in the year 2009, followed by the United States in the same year
- Amongst the South American countries; Brazil, Venezuela, Chile and Ecuador were some of the front-runners to have adopted the system. Ecuador was the last among these four nations adopting the system in the year 2010



(Click on the image to view LRIT graphical representation)

The most important advantage of having this system is that the information required to be shared is …….. This reduces unnecessary problems and increases the transparency and viability of the system on the whole. The main ---------- to the system's application are the following:

- The ---------- and gadget to send the information data
- Centers of data for the system
- Service providers for the overall application of the system
- A thorough distribution plan for the data collected from the system
- International data exchange for the LRIT application also forms an important part of the overall system requirements

Voyage Data Recorder on a Ship Explained

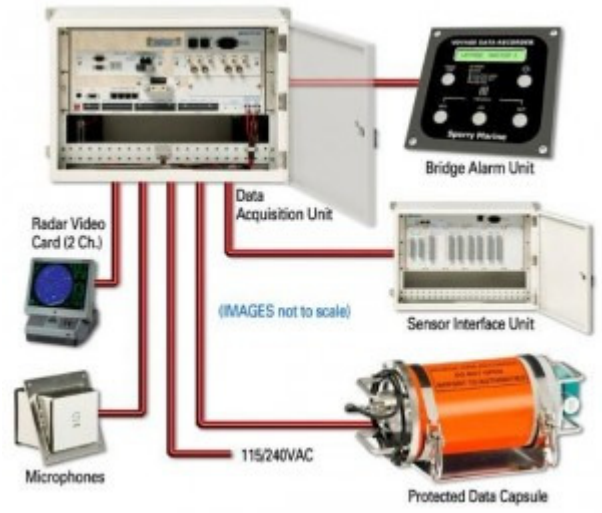
- Just like in Airplanes, a ship is also provided with a black box known as ----------.
- It is said that the ---------- of ship is higher than that of an air plane, as the former is bigger in size and carries several machineries in a ---------- environment, which makes it extremely important to have a voyage data recorder ----------.

What is VDR?

A VDR or voyage data recorder is an instrument safely installed on a ship to ……. It contains a voice recording system for a period of ----------. This recording is recovered and made use of for …….

A ship's VDR is far superior to a black box of an aeroplane as it stores …….. The data records covering the last 12 hours are continuously ---------- by the latest data.

A VDR is capable of ---------- heavy weather, ----------, fires and pressure conditions even when a ship is at a ---------- of several meters in water.



How VDR Works?

There are various ---------- placed on bridge of the ship and on ---------- location from which the required data is continuously ----------.

This collected data which comprises of ……. etc. are then fed to a storage unit where the whole input is recorded and ---------- for at least12 hours.

There is also a record button provided in the bridge unit so that ……

The collected data by VDR is digitalised, ----------, and is stored in a protective storage unit which is mounted in a ----------. This temper proof storage unit can be a retrievable fixed or floating unit connected with ---------- for early location in the event of accident.

Regulatory requirements for carrying VDR

The requirement for carrying VDR under IMO came into force on 1st July 2002 for all the passenger ships constructed after 1st July 2002 and vessel other than ----------.

All the ---------- requirements are stated under Reg- 20 of SOLAS Chapter V, under safety of navigation.

On December 2004, an amendment was ---------- for above regulation for carrying simplified voyage data recorder or S-VDR and it ---------- into force on 1st July 2006.

A S-VDR is a simple data recorder which …….

The VDR at least must record the following:

- Date and time
- ----------
- ----------
- Bridge audio
- ----------
- ----------
- Radar data
- Post display data
- ----------
- Main alarms

- Rudder ----------
- Hull opening (doors) ----------
- Watertight and ---------- fire door status

- Speed and acceleration

- ---------- stresses

- ---------- and direction

You may also like to read-Marine Radars and their Use in the Shipping Industry

Regulation 22 - Navigation Bridge Visibility

Summary

- **Bridge design to minimum specifications ensuring good visibility.**
- **Specifications are for ships of 55m or more in length built on or after 1 July 1998.**
- **Older ships to meet specifications as closely as possible but no structural alterations needed.**
- **Administrations' discretion for ships of unconventional design.**

Regulation 22

1. *Ships of not less than 55 m in length, as defined in regulation 2.4, constructed on or after 1 July 1998, shall meet the following ----------:*

1.1 *The view of the sea surface from the conning position shall not be obscured by more ----------, or 500 m, whichever is the less, forward of the bow to 10° on either side under all conditions of ----------;*

1.2 *No ---------- caused by cargo, cargo gear or other obstructions outside of the wheelhouse forward ---------- which obstructs the view of the sea surface as seen from the conning position, shall exceed 10°. The total arc of blind sectors shall not exceed 20°. The ---------- between blind sectors shall be at least 5°. However, in the view described in .1, each individual blind sector shall not exceed 5°;*

1.3 *The horizontal field of vision from the conning position shall extend over an arc of not less ----------°, that is from ---------- to not less than 22.5°, ---------- on either side of the ship;*

1.4 *From each bridge wing the ---------- of vision shall extend over ---------- at least 225°, that is from at least 45° on the opposite bow through right ahead and then from right ahead to right astern through 180° on the same side of the ship;*

1.5 *From the main steering position the horizontal field of vision shall extend over an arc from right ahead ----------° on each side of the ship;*

1.6 *The ship's side shall be visible from ----------;*

1.7

1.8

1.9