Electronic Chart Display and Information System (ECDIS)

What is ECDIS ?

The Electronic Chart Display and Information System (ECDIS) is a development in the navigational chart system used in naval vessels and ships. With the use of the electronic chart system, it has become easier for a ship's navigating crew to pinpoint locations and attain directions.

ECDIS is a common navigational information system, interfaced with other navigational equipment such as the GPS, Gyro, RADAR, ARPA, Echo Sounder, etc. By using ENC's, the ECDIS is capable ascertain precise depth information and early warning on any potential hazards along the route. A crew can gain even more precise information by calculating and inputting figures such as squat, which can pull a ship closer to the seabed. This information feeds into several other automated functions, providing for extremely accurate route safety judgments and automated safety warnings.

The advantages of ECDIS over traditional paper charts on ships.

- All data is processed in real-time and available for immediate charting.

- Navigational charts are used for simplified passage planning.

- A ship needs to retain important navigational information for their voyage to go smoothly.

- Systems and alarms are in place to indicate and highlight the danger.

- ECDIS navigation is more accurate than paper charts.

- Charts can be customized as per the requirements of the voyage.

- Other navigational equipment such as the AIS, ARPA, etc. can be overlayed, and integrated into it.

- With a variety of features and the ability to zoom in or out, one can examine the charts as needed.

- The distance traveled, time taken by the ship, and estimated arrival time.

- Obtaining a more accurate ETA.

- Charts contain detailed information

- In conclusion, having charts and publications is an important safety measure for all ships.
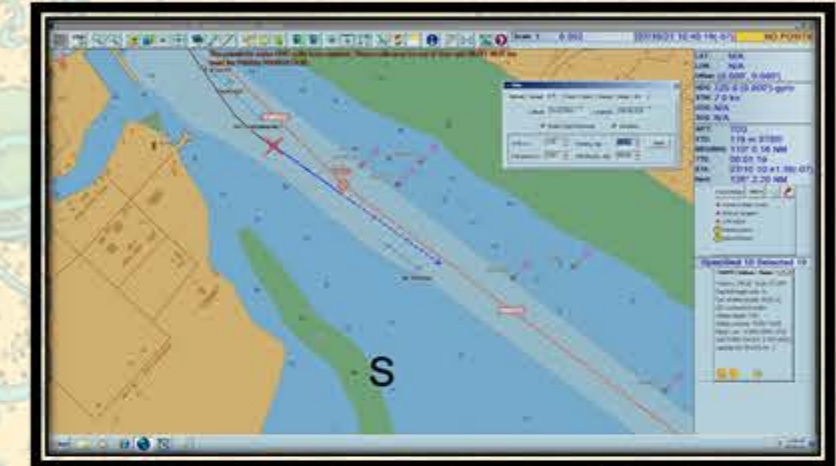
Can simulation the route before sailing
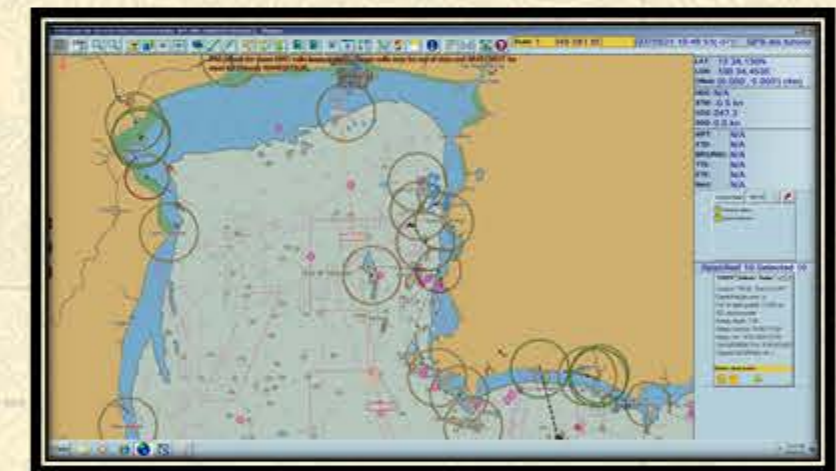
Great resolution and detail

Interfaced with other navigation aid

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ECDIS onboard M.V.SEAFDEC

International Maritime Organization (IMO) performance standards require the ECDIS backup arrangement to ensure the safe takeover of ECDIS functions without resulting in a critical situation. The independent backup arrangement must allow the safe navigation of the ship for the remaining part of her voyage in case of ECDIS failure.

For ships using ECDIS as an aid to navigation, the ship must carry and maintain an appropriate folio of up-to-date paper charts. The ECDIS should be able to operate in a normal capacity even when it is connected and supplied by an emergency source of electrical power. Change over from source of power supply to another, including any interruptions in electrical supply should not require the equipment to be manually reinitialized for 45 seconds.

M.V.SEAFDEC installed The Simrad Maris ECDIS 900 and use for navigation aid equipment on the ship and still use a navigation paper chart for a backup type when ECDIS functions fail by the IMO performance standards required.
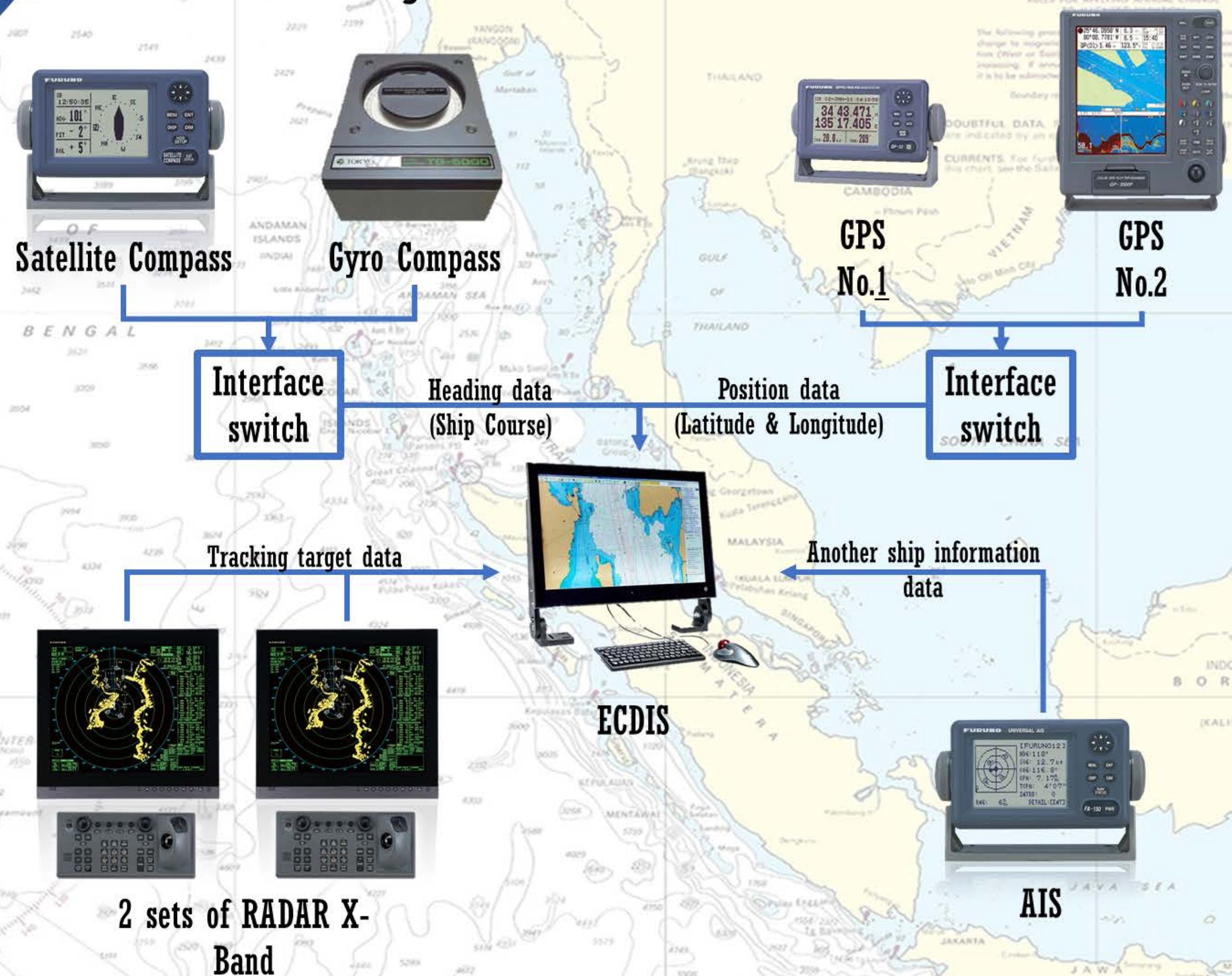
ECDIS Interfaced diagram

Satellite Compass   Gyro Compass   GPS No.1   GPS No.2

Interface switch   Heading data (Ship Course)   Position data (Latitude & Longitude)   Interface switch

Tracking target data   Another ship information data

ECDIS

2 sets of RADAR X-Band   AIS

An interfaced diagram of ECDIS onboard M.V.SEAFDEC is a navigational information system, interfaced with other navigational equipment such as AIS, compass (Satellite & Gyro), 2 sets of GPS, and 2 sets of RADAR (X-band RADAR) to get all necessary navigational informational and enhancing navigation safety.

► Usability

ECDIS

Paper Charts

ECDIS
- Great detail when zooming in or out.
- Connected charts altogether.
- Real-time own position.
- Tracking target and displaying the target information and auto calculate.
- Alarm in case of a dangerous situation.
- Interfaced with other NAV. Equipment.
- Created/edited many routes and many times.
- Easy to update Notice to Mariner.
- Record own past track.
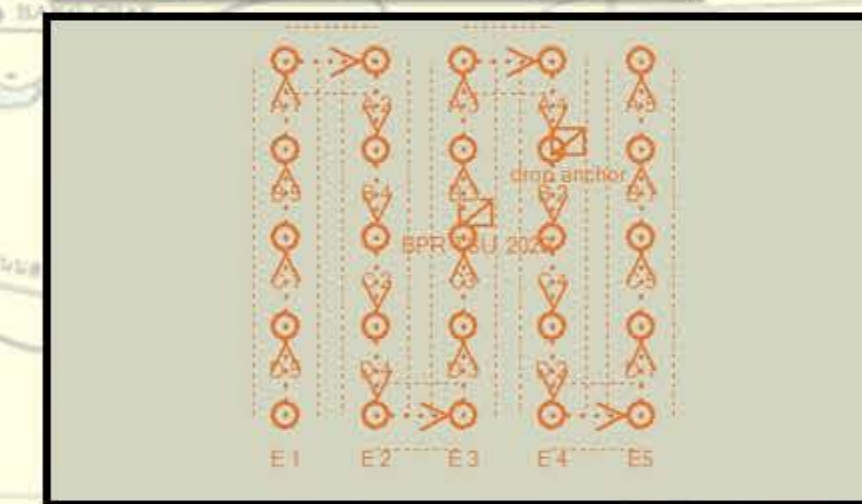- Can simulation the route before departure.

Paper Charts
- Don't need the electric source.
- Can take in any emergency.
- Can find own position by bearing the target when the ship blackout.
- Update Notice to Mariner without internet.
- Don't rely on electronic equipment.

► Recently cruise of M.V.SEAFDEC

Late in 2020, M.V.SEAFDEC has successfully conducted one (1) cruise with a total number of twenty-five (25) days. The Cruise No. 110-1/2020 to provide technical support for Thailand on the deployment and maintenance of the Tsunami Warning System in the Andaman Sea and the Indian Ocean by using the ECDIS for route planning, safe navigation, and survey area around the deployment point.

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