

## Electronic Navigational Charts (ENC)

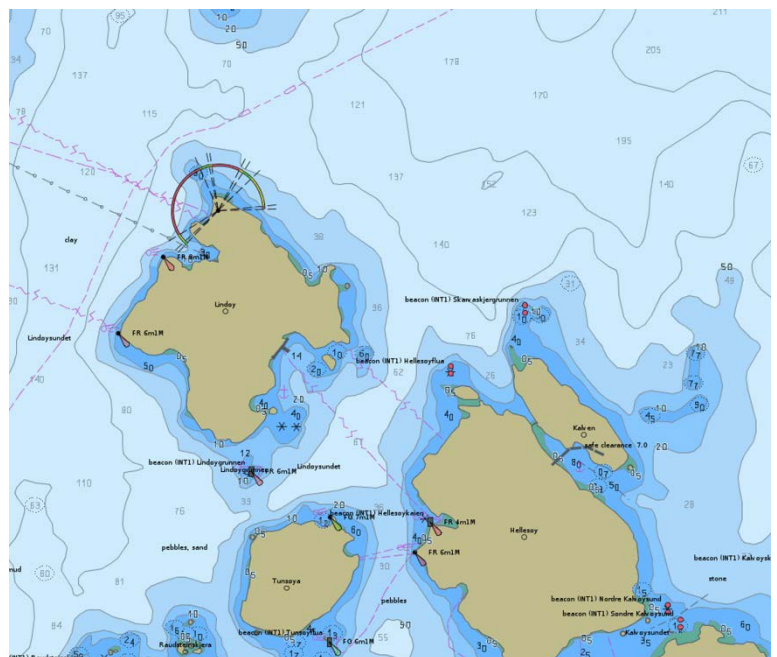
The Electronic Navigational Charts (ENC) are produced in accordance with international standards, and issued for use in an ECDIS (Electronic Chart Display and Information System).

ENCs contain all the chart information necessary for safe navigation, and may contain supplementary information in addition to that contained in the paper chart (e.g. sailing directions) which may be considered necessary for safe navigation. They are produced by or on the authority of a government-authorized hydrographic office or other relevant institution.

### The advantages of ENCs from PRIMAR

- Official charts issued by hydrographic office's, based on the relevant source data or official charts
- Meet Safety Of Life At Sea requirements
- Delivered in accordance with the "ENC Product Specification" of the S57 standard
- Worldwide coverage
- Increased navigation safety
- Improved operational efficiency
- Cost effective route and voyage planning
- Integration with AIS\* and other tools
- Updates available 24/7

ENCs are compiled, coded and regularly updated in accordance with international requirements as regards content and structure.



ECDIS is a type of navigational electronic chart system for installation on the bridge of a vessel, which complies with the requirements stipulated by the International Maritime Organization (IMO). When used in a type-certified ECDIS system, the ENCs can replace paper charts for navigation.

When used with an approved backup system, ECDIS is considered a legal replacement for paper charts – if the data is prepared in accordance with the stipulated requirement specifications (S57 ENC Product Specification). The S57 standard was prepared with regard to the exchange of hydrographic data.

As an example: Electronic Chart System (ECS) does not comply with the "IMO Performance Standards", and do not satisfy the requirements related to navigational charts on board vessels as defined in SOLAS Chapter V (International Convention for the Safety of Life at Sea).

Neither the Raster Chart Display System (RCDS) is approved by the International Maritime Organization (IMO), since the system does not comply with the ECDIS requirements. However, IMO has allowed use of raster data in ECDIS if there is no relevant ENC data for the area, but in Norwegian waters raster charts will not supersede the requirement to have updated paper charts on board.

\*AIS – Automatic Identification System – is an automatic tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels.

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