ECDIS

READ ALL

SENC is Storage for ECDIS

SENC – System Electronic Navigational chart.

SENC Convert ENC data

Advantage of ECDIS

1) Availablity (2) Alarms (3) Reduces work load

(4) Continous Monitoring (5) Record keeping / incident investigation.

9 base

total 7 Appendix

Chart used in ECDIS is ENC { Electronic Navigation chart }

IBS – Integrated Bridge System

WGS – 84 Horizontal datum used in Ecdis

S-52 – gives Symbol & abbrevation IN ECDIS.

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RADAR OVER LAY :-

If the radar image is added to the ECDIS display, the chart & the radar image should match in scale & in orientation.

- ECDIS should provide for true-motion mode. Other modes are permitted.
- It should always be possible to display the SENC in a "north up" orientation. Other orientations are permitted.

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The effective size of the chart presentation for
route monitoring should be atleast 270 mm by 270 mm

The display should be capable of complying with
the colour & resolution recommendations of IHO

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Updating of Electronic charts :-

Automatic Updating

ENC stored in a SENC require weekly update. Updating data can be made in 2 ways :-

- sending a CD ROM by Post
- data transfer by satellite or mobile phone.

Manual updating

Manual update are built into each ECDIS system in accordance with the relevant annex of the S-52 Standard. Manual updates must be saved into separate folders in order to avoid overlap with update data received by CD ROM as in the case of automatic updating. manual update may be deleted from the system when necessary.

3 Bodies involves in making ECDIS ~~the ECDIS tools~~

i) IMO (ii) IHO (iii) IEC

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IR 52921... { For example }

Agency of chart

5 — scale band { total 6 scale band }

2921... → chart no.

~~EC~~ ENCs like paper chart are provided on a particular scale. The scale on which the ENCs are produced is known as the ~~compilation~~ Compilation scale (!). The scale are divided into 6 navigational purpose bands they are

value	Navigational Purpose band		scale range
1	overview	O	< 1: 1,499,999
2	General	G	1:350,000 — 1: 1,499,999
3	Coastal	C	1: 90,000 — 1: 1349,999
4	APPROACH	A	1: 22,000 — 1: 89,999
5	Harbour	H	1: 4,000 — 1: 21,999
6	Berthing	B	> 1:4000

Safety contour — Ship draft + company UKC policy + ZoC correction + squat — Ht of tide

Safety depth — Ship draft + UKC

Shallow Contour — Value selected by Mariner normally less than safety depth

Deep Contour — 2 or 2.5 time Static draft of Ship

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Precautions:-

1) Always use correct scale band
2) use compilation scale or within the limit
3) We should aware of accuracy pattern i.e cat 20C or 20C
4) use appropriate Alarm setting as per SMS/ master instructions.
5) contours - Proper setting of contour
6) Route check to be carried out prior activating the route.

Passage Plan:-

1) Update VSI particular (Dynamic particular)
2) Carry out Alarm setting, contour setting
3) Make passage Plan.
4) Carry out route check
5) Verify each comment in route check
6) Check the complete Plan route in the compilation scale
7) Activate the route.

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If Ratio of UKC & draft is 1:2 then we are in Shallow water

eg:- draft = 10m

UKC = 5m

$\frac{5}{10}$ = 1:2 = Shallow

$\frac{10}{10}$ = 1:1 = no Shallow.

WOD - wheel over distance

WOD = F Sinθ + R(1-cosθ)

θ = ∠S

F = adv

R = Radius of turn

Radius of turn = $\frac{V}{R}$, V = speed
R = Radius of turn

DR to be kept off always. DR should be ON only when both GPS fails

For performance check

Down load chart - AA2TD502 & AA5TD505

Limitation of ECDIS:-

i) vector chart is only available for 30% navigable water

ii) Contour on chart are not equally spaced

iii) NO provision to show tug-boats & bow thruster

iv) Electric driven - may be Power failure

v) over reliance.

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ZONE OF CONFIDENCE

FROM S-57

Zone of confidence ZOC [1]	Position Accuracy [2]	Depth Accuracy [3]	Seafloor Coverage	Typical Survey Characteristics [5]
A1 6 Star	± 5 m	a = 0.5 b = 1 Depth (m) / Accuracy (m): 10 / ± 0.6 30 / ± 0.8 100 / ± 1.5 1000 / ± 10.5	Full seafloor ensonification or sweep. All significant seafloor features detected [4] and depths measured.	Controlled, systematic high accuracy Survey on WGS 84 datum, using DGPS or a minimum three lines of position (LOP) with multibeam, channel or mechanical sweep system.
A2 5 Star	± 20 m	a = 1.0 b = 2 Depth (m) / Accuracy (m): 10 / ± 1.2 30 / ± 1.6 100 / ± 3.0 1000 / ± 21.0	Full seafloor ensonification or sweep. All significant seafloor features detected [4] and depths measured	Controlled, systematic survey to standard accuracy, using modern survey echosounder with sonar or mechanical sweep
B 4 Star	± 50 m	a = 1.0 b = 2 Depth (m) / Accuracy (m): 10 / ± 1.2 30 / ± 1.6 100 / ± 3.0 1000 / ± 21.0	Full seafloor coverage not achieved; uncharted features, hazardous to surface navigation are not expected but may exist.	Controlled, systematic survey to standard accuracy.
C 3 Star	± 500 m	a = 2.0 b = 5 Depth (m) / Accuracy (m): 10 / ± 2.5 30 / ± 3.5 100 / ± 7.0 1000 / ± 52.0	Full seafloor coverage not achieved, depth anomalies may be expected.	Low accuracy survey or data collected on an opportunity basis such as soundings on passage.
2 Star D	worse than ZOC C	worse than ZOC C	Full seafloor coverage not achieved, large depth anomalies may be expected.	Poor quality data or data that cannot be quality assessed due to lack of information

U unaccessed survey not carried out

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Carriage ~~fee~~ requirement:-

Passenger Ship 500 grt or more on & after 1 July 2012
Tanker of 3000 grt or more on & after 1 July 2012
Cargo Ship of 10,000 grt or more on & after 1 July 2013

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