INTERNATIONAL HYDROGRAPHIC ORGANIZATION

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE

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CIRCULAR LETTER 87/2007
28 September 2007

TRANSFER OF GLOSSARY OF ECDIS RELATED TERMS FROM S-52 APPENDIX 3 TO ECDIS GLOSSARY (S-32 APPENDIX 1)

Reference: CL 65/2007 dated 17 July

Dear Hydrographer,

1 The IHB thanks Finland, Greece, Norway, Peru, Singapore, Spain and the UK for their replies to the Reference. All replies supported the publishing of S-32 Appendix 1 – Glossary of ECDIS Related Terms. The replies together with IHB comments are at Annex A.

2 As proposed by Singapore and the UK the definitions of ENC, RNC and RENC have been added to the glossary. The definition for ENC has been taken from IMO resolution MSC.232(82) - ECDIS Performance Standards adopted by the IMO in December 2006. This is slightly different from that currently used for ENC in S-32 and that which was used in S-52 Appendix 3. The definition for RNC has also been taken from MSC.232(82). The definition for RENC has been taken from Annex B to the Reference. The IHB has amended the definitions for ECDIS and SENC to agree with those used in MSC.232(82) which differ very slightly from those previously used. Having made these amendments the IHB considers, in the interests of consistency, that the following two terms from MSC.232(82): *System Raster Navigational Chart Database (SRNC)* and *Raster Chart Display System (RCDS)*, be included in the Glossary. The above terms will be referred to the Dictionary Committee for inclusion in the electronic version of S-32.

3 The draft text circulated with the Reference included a definition for *sounding datum*. This term is not ECDIS specific and is already included in S-32. It has therefore been removed from the published S-32 Appendix 1.

4 The Glossary of ECDIS Related terms (S-32 Appendix 1) in English is now available from the IHO website. French and Spanish Glossaries will be placed on the website once the translation has been completed. The terms will also be included in the online version of S-32 once the French and Spanish definitions are available. S-52 Appendix 3 will now be removed from the IHO catalogue.

5 The IHB thanks Spain and Peru for offering to translate S-32 Appendix 1 into Spanish. The first translation provided by Peru will be passed to Spain for consultation when preparing the final Spanish text of the Glossary.

On behalf of the Directing Committee
Yours sincerely,

Vice Admiral Alexandros MARATOS
President

Annex A: Comments by Member States
Enclosure: S-32 Appendix 1

Finland

No comments to the proposals

Greece

Greece agrees with the ECDIS Glossary to be included as Appendix 1 to the Hydrographic Dictionary.

Norway

Norway has no comments

Peru

We are pleased to send you a first translation into Spanish of Annex A of the Circular letter, concerning the Glossary of ECDIS Terms, which will be included as Appendix No. 1 to the Hydrographic Dictionary of the International Hydrographic Organization (S-32).

Likewise, it has to be mentioned that in the Annex A distributed to Member States, a definition of the term "Identifier" or "Identificador" in Spanish, the same referring to another term: "Object Identifier"' or "Identificador de Objeto", is missing; it has not been included in the definitions. So, I would appreciate very much your action before the relevant body to have such definition revised and added.

In case amendments to the Glossary of ECDIS Terms or to the translation would be required, this Directorate volunteers to incorporate them in the Spanish language version.

IHB: The original recommendation from CHRIS was not to include the definition of "Object Identifier" in the Glossary as the definition was unclear and likely to confuse rather than explain. Consequently "Identifier" which only refers to "Object Identifier" should also have been deleted. This has now been removed from the Glossary. The IHB thanks Peru for providing the first translation; this will be passed to Spain who has also volunteered to prepare the final translation of the Glossary.

Spain

In reply to the CL at the Reference I am pleased to inform you that Spain volunteers to translate into Spanish the definitions to be included in S-32. Likewise we do not have any comments to make with respect to the English text.

IHB: The IHB is pleased to accept Spain's offer to translate the definitions into Spanish.

Singapore

We support the proposed revised set of definitions as described in Annex A of the CL. However, we view that some of the definitions in Annex 2 should also be included in Annex A as they are closely related to ECDIS, eg. AIS, RENC and RNC. We see their relevance and their definitions should be modified to described their specific relationship to ECDIS. For example, AIS targets can be displayed on an ECDIS and that the IMO is the body that approves the ECDIS Performance Standards.

IHB: These terms were not included in the Glossary because they do not have definitions that are either specific to ECDIS or that in the context of ECDIS are different to those that might otherwise be used. However it is accepted that RENC and RNC are fundamental to ECDIS and have therefore been included in S-32 Appendix 1 (see also comments from the UK) The Dictionary Committee will be asked to give further consideration to all the remaining terms in Annex B to the Reference.

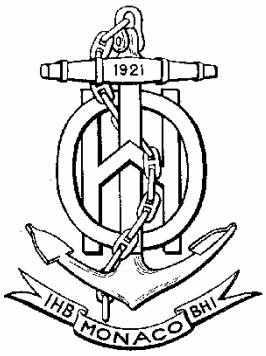
UK

UK has reviewed the subject Circular Letter and commends the work carried out to date towards compiling the glossary and making it available on the IHO website.

The contents of the glossary are comprehensive, however, noting that ECDIS is defined in Annex A, I believe that definitions of both ENC and RNC (mentioned in Annex B) should be also added to the list. This is I believe justified as both are mentioned in the IMO ECDIS Performance Standard and the use of official electronic charts within ECDIS is central to the use of that term.

IHB: The IHB agrees that ENC and RNC are fundamental to ECDIS and they have been included in S-32 Appendix 1 (See also the comments from Singapore).

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



HYDROGRAPHIC DICTIONARY

Volume 1

English

Special Publication No. 32
Appendix 1
Glossary of ECDIS Related Terms

September 2007

Published by the
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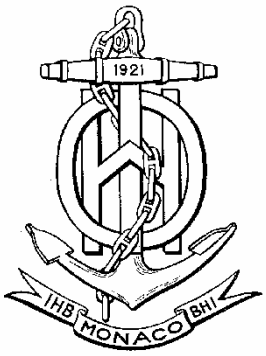

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GLOSSARY OF ECDIS RELATED TERMS

alarm	In ECDIS a device or system which alerts by audible means, or audible and visual means, a condition requiring attention.
all other information	In ECDIS used to describe information additional to the STANDARD DISPLAY. Also called "ON-DEMAND INFORMATION".
application profile	In ECDIS used in reference to data structure. An application profile is defined for a specific purpose, such as the transfer of ENC DATA.
applier	In ECDIS used for an ENTITY controlling the application of the UPDATE INFORMATION, e.g. the mariner keying in update information, or software inside ECDIS automatically processing the ENC update information.
area	In ECDIS the 2-dimensional GEOMETRIC PRIMITIVE of an OBJECT that specifies location.
attribute	In ECDIS a characteristic of an OBJECT, usually of a charted feature. It is implemented by a defined ATTRIBUTE LABEL/CODE, acronym, definition and applicable values. In the DATA STRUCTURE, the attribute is defined by its LABEL/CODE. Attributes are either qualitative or quantitative.
attribute label/code	In ECDIS, a fixed length numeric label or a 2-byte unsigned integer code of an ATTRIBUTE.
attribute value	In ECDIS, a defined characteristic of an ATTRIBUTE LABEL/CODE.
automatic updating	In ECDIS, either the SEMI-AUTOMATIC or the FULLY AUTOMATIC means of updating the ENC/SENC.
back-up arrangement	In ECDIS, facilities enabling safe take-over of ECDIS functions and measures facilitating means for safe navigation of the remaining part of the voyage in case of ECDIS failure.
base data	In ECDIS, the S-57 conforming data at the data producer's site that does not contain any UPDATE RECORDS. Once this data is exchanged, it becomes TARGET DATA at the APPLIER's site.
cartographic object	In ECDIS, a FEATURE OBJECT which contains information about the cartographic representation (including text of real world ENTITIES.
cell	In ECDIS the basic unit of ENC DATA covering a defined geographical area bounded by two meridians and two parallels.
chain node	In ECDIS the data structure in which the geometry is described in terms of EDGES, ISOLATED NODES and CONNECTED NODES. Edges and connected nodes are topologically linked. NODES are explicitly coded in the DATA STRUCTURE.
chart amendment patch	see CHARTLET
chart cell	see CELL
clutter	In ECDIS excess information or noise data on a DISPLAY or CHART, reducing legibility.

collection object	In ECDIS a FEATURE OBJECT describing the RELATIONSHIP between other OBJECTS.
colour calibration	In ECDIS, in order to reproduce the IHO colours for ECDIS, a colour calibration at the monitor must be performed to transform the CIE-specified colours for ECDIS into the colour coordinate system of the screen. Calibration will ensure correct colour transfer at the time a DISPLAY leaves the manufacturer's plant.
colour differentiation test diagrams	In ECDIS - screen diagrams supplied in the PRESENTATION LIBRARY for use by the mariner to check brightness and contrast settings and to find out whether the screen still has the capability of distinguishing the important colours.
colour fill	In ECDIS the use of colour to fill the interior area of a chart symbol to make it more readily recognizable, In ECDIS a method of distinguishing different area features by filling areas with colour. "Transparent" colour fill is used to allow information to show through the fill, e.g., soundings in a traffic separation zone.
compilation scale	In ECDIS the SCALE at which the DATA was compiled.
compilation update	In ECDIS the CORRECTION INFORMATION which has been issued since the last new edition of the ENC or since the last OFFICIAL UPDATE applied to the SENC, compiled into a single, comprehensive ENC UPDATE.
connected node	In ECDIS a NODE referred to as a beginning and/or end node by one or more EDGE. Connected nodes are defined only in the CHAIN-NODE, PLANAR GRAPH and FULL TOPOLOGY data structures
correction information	See UPDATE INFORMATION
course up display	In ECDIS (or radar) the information shown on the DISPLAY with the direction of the vessel's course upward.
cumulative update	In ECDIS, the collection of all sequential CORRECTION INFORMATION which has been issued since the last new edition of the ENC or since the last OFFICIAL UPDATE applied to the SENC
cursor-pick	In, ECDIS, the process of querying a point-symbol. Line or area for further information from the data base which is not represented by the SYMBOL.
data dictionary	In ECDIS, conveys the meaning of ENTITIES and ATTRI-BUTES, the RELATIONSHIP between entities and attributes and the relationship between attribute and value domains.
data model	In ECDIS a conceptual specification of the sets of components and the RELATIONSHIPS among the components pertaining to the specific phenomena defined by the model reality. A data model is independent of specific systems or DATA STRUCTURES.

data quality indicator	In ECDIS an indication of reliability and ACCURACY of surveys of a particular area provided through relevant ATTRIBUTE of the quality of data META OBJECT in the IHO TRANSFER STANDARD.
data structure	In ECDIS a computer interpretable format used for storing, accessing, transferring and archiving data.
digitizing conventions	See ENCODING CONVENTIONS
display base	See DISPLAY CATEGORY
display category	In ECDIS, three categories for SENC objects are established in the ECDIS PERFORMANCE STANDARDS: display base: permanently retained on the display standard display: displayed at switch-on, recalled by single operator action, ALL OTHER INFORMATION: displayed individually (by class) on demand
display generator	In ECDIS the manufacturer's software which takes an OBJECT from the SENC, assigns a symbol and colour, and presents it appropriately on the DISPLAY, using the tools and procedures provided in the PRESENTATION LIBRARY
display priority	In ECDIS, detailed rules to decide which line or point SYMBOL is to be shown when two OBJECTS overlap. Priority 2 overwrites 1. Display priority is given in the LOOK-UP TABLE
display priority layer	In, ECDIS, layers to establish the priority of information on the DISPLAY. Lower priority information must not obscure higher priority information
display scale	In ECDIS the ratio between a distance on the display and a distance on the ground, normalised and expressed for example 1/10,000 or 1:10,000
drawing sequence	In ECDIS the implementation of DISPLAY PRIORITY.
ECDIS	See ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEM
ECDIS Chart 1	An ECDIS version of IHO INT 1, including all SYMBOLS, line styles and colour coding used for chart and navigation symbols, contained in the PRESENTATION LIBRARY
edge	In ECDIS, a one-dimensional SPATIAL OBJECT, located by two or more coordinate pairs (or two CONNECTED NODES) and optional interpolation parameters. If the parameters are missing, the interpolation is defaulted to straight line segments between the coordinate pairs. In the CHAIN-NODE, PLANAR GRAPH and FULL TOPOLOGY data structures, an edge must reference a connected node at both ends and must not reference any other NODES
Electronic Chart Data Base (ECDB)	In ECDIS the master data base for electronic navigational chart data, held in digital form by the national hydrographic authority.

Electronic Chart Display and Information System (ECDIS)	a navigation information system which with adequate back-up arrangements can be accepted as complying with the up-to-date chart required by regulations V/19 and V/27 of the 1974 SOLAS Convention, as amended, by displaying selected information from a SYSTEM ELECTRONIC NAVIGATIONAL CHART (SENC) with positional information from navigation sensors to assist the mariner in route planning and route monitoring, and if required display additional navigation-related information.
Electronic Chart System (ECS)	Navigation information system that electronically displays vessel position and relevant nautical chart data and information from the ECS database on a display screen, but does not meet all IMO requirements for ECDIS, and does not satisfy SOLAS Chapter V requirement to carry a navigational chart.
Electronic Navigational Chart (ENC)	The data base, standardized as to content, structure and format, issued for use with ECDIS on the authority of government authorized hydrographic offices. The ENC contains 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.
ENC cell structure	See CELL
ENC product specification	In ECDIS the IHO Standard which specifies the content, structure and other mandatory aspects of an ENC
ENC test data set	In ECDIS a standardized data set supplied on behalf of the INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO) that is necessary to accomplish all IEC testing requirements for ECDIS.
encapsulation	In ECDIS the identification of FIELDS and RECORDS and the grouping of fields and records and the data syntax rules used.
encoding conventions	In ECDIS a set of rules to be followed when encoding data for a particular purpose.
exchange format	In ECDIS a specification for the structure and organization of data to facilitate exchange between computer systems.
exchange set	In ECDIS the set of FILES representing a complete, single purpose (i.e. product specific) data transfer. The ENC PRODUCT SPECIFICATION defines an exchange set which contains one Catalogue file and at least one data set file.
face	In ECDIS a two dimensional SPATIAL OBJECT. A face is a continuous area defined by a loop of one or more EDGES which bound it. A face may contain interior holes, defined by closing loops of EDGES. These interior boundaries must be within the outer boundary. No boundary may cross itself or touch itself other than at the beginning/end NODE. None of the boundaries may touch or cross any other boundary. Faces are defined only in the FULL TOPOLOGY data structure.
feature	In ECDIS a representation of a real world phenomenon
feature object	In ECDIS an OBJECT which contains the non-locational information about real world ENTITIES.

feature record	In ECDIS a feature record is the implemented term used in the S-57 data structure for a FEATURE OBJECT (i.e. a feature object as defined in the DATA MODEL is encoded as a feature record in the DATA STRUCTURE). There are four types of feature records: GEO, META, COLLECTION, and CARTOGRAPHIC.
field	In ECDIS, a named collection of labelled subfield(s). For example, IHO ATTRIBUTE LABEL/CODE and IHO ATTRIBUTE VALUE are collected into a field named Feature Record Attribute.
file	In ECDIS, an identified set of S-57 records collected together for a specific purpose. The file content and structure must be defined by a PRODUCT SPECIFICATION.
fully automatic updating	In ECDIS the application of corrections to ENC DATA in the SENC in a fully integrated state, without human intervention.
full topology	In ECDIS a 2-dimensional DATA STRUCTURE in which the geometry is described in terms of NODES, EDGES and FACES which are all TOPOLOGICALLY linked. A PLANAR GRAPH with faces.
geo object	In ECDIS a FEATURE OBJECT which carries the descriptive characteristics of a real world ENTITY.
geometric primitive	In ECDIS one of the three basic geometric units of representation: POINT, LINE, and AREA
ground stabilization	In ECDIS a display whereby own ship position is referenced to the ground. It is usually performed in conjunction with radar/ARPA, it can be determined by computing set and drift or by the use of GPS/DGPS
head-up display	In ECDIS information shown on a display in such a fashion so that the vessel's HEADING is always pointing upward. This ORIENTATION corresponds to the visual view from the bridge in the direction of the ship's heading. This orientation may require frequent rotations of the display contents. Changing the ship's course or yawing of the vessel may render this non stabilized orientation mode unreadable. (See COURSE-UP DISPLAY)
HO-information	In ECDIS, the information content of the SENC originated by hydrographic offices. It consists of the ENC content and UPDATES to it.
IHO Transfer Standard for Digital Hydrographic Data	In ECDIS a "THEORETICAL DATA MODEL", "DATA STRUCTURE", "OBJECT CATALOGUE", "ENC PRODUCT SPECIFICATION", "USE OF THE OBJECT CATALOGUE for ENC" and an "Object Catalogue DATA DICTIONARY Product Specification" for use in the exchange or transfer of digital hydrographic data.
IHO test data set	See ENC test data set.
isolated node	In ECDIS an isolated zero-dimensional SPATIAL OBJECT that represents the geometric location of a point FEATURE.

Issuing Authority	In ECDIS the official agency which issues nautical chart and updates including ENC's and ENC UPDATES.
key	In ECDIS, an identifier which establishes linkages, e.g. between different LAYERS, or FEATURES and ATTRIBUTES.
label/code	See ATTRIBUTE LABEL/CODE
layer	In ECDIS, a group of related information displayed as a whole.
leg	In ECDIS a line connecting two WAYPOINTS
line	In ECDIS a one-dimensional GEOMETRIC PRIMITIVE of an OBJECT.
local updates	In ECDIS a generic term used to indicate all update information other than OFFICIAL UPDATES, regardless of source; for application as a MANUAL UPDATE only as opposed to automatic updates
log file	In ECDIS a record of nautical information, including time of application and identification parameters.
look-up table	In ECDIS a table giving symbology instructions to link SENC objects to point, line or area symbolisation, and providing DISPLAY PRIORITY, radar priority, IMO category and optional viewing group.
manual update	In ECDIS, the manual application of corrections to ENC DATA in the SENC by human operator, usually based on unformatted UPDATE INFORMATION (such as NtMs, voice radio, verbal communications, etc.) The manual application of hand corrections to nautical charts.
mariner's information	In ECDIS, the information is entered to the SENC, e.g. area of strong currents. Information originated by and added by the mariner;
mariner's navigational objects	In ECDIS features other than chart objects, such as the ownship symbol and velocity vector, planned route, bearing line, etc.
Marine Information Object (MIO)	In ECDIS an OBJECT which has one or more ATTRIBUTES, the value or values of which vary with time.
matrix	In ECDIS an array of regularly spaced locations.
meta object	In ECDIS a FEATURE OBJECT containing information about other OBJECTS.
navigational information	In ECDIS the information contained in MARINER's NAVIGATIONAL OBJECTS
navigational purpose	In ECDIS, the specific purpose for which an ENC has been compiled. There are six such purposes; berthing, harbour, approach, coastal, general, and overview
navigational symbol	See MARINERS' NAVIGATIONAL OBJECTS
node	In ECDIS a zero-dimensional SPATIAL OBJECT, located by a pair of coordinates. A node is either ISOLATED or CONNECTED.
non-chart symbol	See MARINERS NAVIGATIONAL OBJECTS.

non-HO information	In ECDIS, the information contained in the SENC provided by non-HO sources (MARINER'S INFORMATION or other sources outside HOs.
north-up display	In ECDIS information shown on the display (radar or ECDIS) with the north direction upward. The north-up display corresponds with the usual ORIENTATION of the nautical chart.
object	In ECDIS an identifiable set of information. An object may have ATTRIBUTES and may be related to other objects. See also SPATIAL OBJECT and FEATURE OBJECT
Object Catalogue	In ECDIS a feature schema which provides a description of real world entities. It contains a list of FEATURE OBJECT classes (each relating to a real world entity), ATTRIBUTES and allowable ATTRIBUTE VALUES
object class	In ECDIS a generic description of OBJECTS which have the same characteristics.
object description	In ECDIS the definition of which OBJECT CLASS a specific OBJECT belongs to.
official HO data	See HO information
official updates	In ECDIS, updates provided in digital format by the ISSUING AUTHORITY of the ENC being corrected, for integration with the ENC DATA in the SENC. Updates provided by the ISSUING AUTHORITY for application to a chart.
on-demand information	In ECDIS, the SENC information which is not part of the standard display. See also ALL OTHER INFORMATION.
orientation	In ECDIS, the mode in which information on the ECDIS is being presented. Typical modes include: **north-up** - as shown on a nautical CHART, north is at the top of the display; **Ship's head-up** - based on the actual HEADING of the ship, (e.g. Ship's gyrocompass); **course-up display** - based on the COURSE or ROUTE being taken
Other chart information	See DISPLAY CATEGORY
other navigational information	In ECDIS, NAVIGATIONAL INFORMATION not contained in the SENC, that may be displayed by an ECDIS, such as radar information.
overscale	In ECDIS, to display the chart information at a DISPLAY SCALE larger than the COMPILATION SCALE. Overscaling may arise from a deliberate overscaling by the mariner, or from automatic overscaling by ECDIS in compiling a DISPLAY when the data included is of various NAVIGATIONAL PURPOSES.

overscale area	In, ECDIS, when the data displayed is from data of two different NAVIGATIONAL PURPOSES the chart display will, where drawn at the larger SCALE, include an overscale area of data from the smaller scale CELL in order to complete the DISPLAY. This area should be identified by the "overscale pattern" of the PRESENTATION LIBRARY.
own ship's safety contour	In ECDIS the contour related to the own ship selected by the mariner from the contours provided for in the SENC, to be used by ECDIS to distinguish on the DISPLAY between the safe and the unsafe water, and for generating anti-grounding ALARMS
own ship's symbol	In ECDIS (and ARPA) a non-chart symbol used to show the ship's position on the CHART or ARPA display.
own ship	In ECDIS a term identifying the vessel upon which an ECDIS is operating.
Performance Standards for ECDIS	Minimum performance requirements for ECDIS, adopted by IMO as Assembly resolution and published as an Annex to IMO resolution MSC.232(82)
planar graph	In ECDIS a 2-dimensional data structure in which the geometry is described in terms of NODES and EDGES which are TOPOLOGICALLY linked. A special case of a CHAIN-NODE data structure in which edges must not cross. CONNECTED NODES are formed at all points where edges meet.
presentation	In ECDIS the cartographic design including drawing, use of symbols, use of colours, use of conventional practices, etc.
Presentation Library	In ECDIS a set of mostly digital specifications, composed of SYMBOL libraries, colour schemes, LOOK-UP TABLES and rules, linking every OBJECT CLASS and ATTRIBUTE of the SENC to the appropriate presentation of the ECDIS DISPLAY.
raster	In ECDIS a regular array with information pertaining to each element (PIXEL) or group of elements. See also RASTER DATA PRESENTATION
Raster Chart Display System (RCDS)	In ECDIS means a navigation information system displaying RNCs with positional information from navigation sensors to assist the mariner in route planning and route monitoring, and if required, display additional navigation-related information.
Raster Navigational Chart (RNC)	A facsimile of a paper chart originated by, or distributed on the authority of, a government-authorized hydrographic office. It is either a single chart or a collection of charts.
RCDS	See RASTER CHART DISPLAY SYSTEM.
record	In ECDIS, a TRANSFER STANDARD construct which is comprised of one or more tagged FIELDS and identified by a KEY.
relationship	In ECDIS a logical link between two elements from the DATA MODEL which may be spatial (e.g. TOPOLOGICAL relationship) and/or non-spatial. In general a relationship is implemented in the data structure as a POINTER.

relative motion display	In ECDIS, a DISPLAY in which OWN SHIP remains stationary, while all other charted information and targets move relative to own ship's position. See also TRUE MOTION DISPLAY.
Regional ENC Coordinating Centre (RENC)	An organizational entity where IHO Member States have established cooperation amongst each other to guarantee a world-wide consistent level of high quality data, and for bringing about coordinated services with official ENCs and updates to them.
resolution	The capability of depicting detail, represented by the smallest distance apart at which two objects can be seen to be separate. The separation is called the RESOLVING POWER. In ECDIS, it is dependent on PIXEL size.
RNC	See RASTER NAVIGATIONAL CHART.
route	In ECDIS, a sequence of WAYPOINTS and LEGS.
route monitoring	In ECDIS, the operational navigational function in which the chart information is displayed, under control of the positioning sensor input, according to the vessel's present position (either in TRUE MOTION or RELATIVE MOTION DISPLAY mode.)
route planning	In ECDIS the pre-determination of COURSE, speed, WAYPOINTS and radius in relation to the waters to be navigated, and in relation to other relevant information and conditions.
safety contour	See OWN SHIP's SAFETY CONTOUR
safety depth	In ECDIS the depth defined by the mariner, e.g. the ship's draft plus under keel clearance, to be used by the ECDIS to emphasize soundings on the DISPLAY equal to or less than this value.
scale bar	A graduated line on a MAP, PLAN, PHOTOGRAPH, or MOSAIC, by means of which actual ground distances may be determined. Also called GRAPHIC SCALE or LINEAR SCALE. In ECDIS, a vertical bar scale of 1 nautical mile divided into $1/10^{ths}$, intended to convey an immediate sense of distance.
semi-automatic updating	In ECDIS, the application of CORRECTIONS to ENC DATA in the SENC updating in a fully integrated state, by hard media or telecommunications transfer in a manner which requires human intervention at the ECDIS interface.
SENC	See SYSTEM ELECTRONIC NAVIGATIONAL CHART
simplified symbols	In ECDIS SYMBOLS designed specifically for fast draw and to give the maximum clarity under all conditions of viewing the CRT. They are less complex than the equivalent paper CHART SYMBOLS.
spaghetti data	In ECDIS a DATA STRUCTURE in which all lines and points are unrelated to each other (i.e. no topological RELATIONSHIPS exist in the data structure)

spatial object	In ECDIS an OBJECT which contains locational information about real world ENTITIES.
spatial record	In ECDIS the implemented term used in the IHO transfer standard data structure for a spatial object (i.e. a SPATIAL OBJECT as defined in the data model is encoded as a spatial record in the data structure). There are three types of spatial records: VECTOR, RASTER and MATRIX.
standard display	See DISPLAY CATEGORY
supplementary information	In ECDIS non-chart hydrographic office information, such as SAILING DIRECTIONS, TIDE TABLES, LIGHT LISTS.
SRNC	See SYSTEM RASTER NAVIGATIONAL CHART DATABASE.
System Electronic Navigational Chart (SENC)	In ECDIS means a database, in the manufacturer's internal ECDIS format, resulting from the lossless transformation of the entire ENC contents and its updates. It is this database that is accessed by ECDIS for the display generation and other navigational functions, and is equivalent to an up-to-date paper chart. The SENC may also contain information added by the mariner and information from other sources.
System Raster Navigational Chart Database (SRNC)	In ECDIS means a database resulting from the transformation of the RNC by the RCDS to include updates to the RNC by appropriate means.
textual HO information	In ECDIS information presently contained in separate publications (e.g. SAILING DIRECTIONS) which may be incorporated in the ENC, and also textual information contained in explanatory attributes of specific objects.
time varying object	In ECDIS an OBJECT which has one or more ATTRIBUTES, the value or values of which vary with time.
topology	In ECDIS and digital data, the set of properties of geometric forms (such as connectivity, neighbourhood) which is defined with the DATA MODEL remaining invariant when subject to a continuous transformation.
true-motion display	In ECDIS, a DISPLAY in which OWN SHIP and each target moves with its own true motion, while the position of all charted information remains fixed. See also RELATIVE MOTION DISPLAY.
underscale	In ECDIS the condition where data displayed are not the largest scale NAVIGATIONAL PURPOSE data available for that area.
update	See UPDATE INFORMATION. (Verb) applying the UPDATE MECHANISM. See also OFFICIAL UPDATES.
update information	In ECDIS, the data which are needed to update the TARGET DATA automatically. Update information comprises one or more UPDATE RECORDS.

update mechanism	In ECDIS, the defined sequence of update operations necessary to update the TARGET DATA by applying the UPDATE INFORMATION to the content of the TARGET DATA so that no operator interaction is involved.
update record	In ECDIS a generic term for FEATURE or SPATIAL RECORDS containing update instructions.
warning	In ECDIS an ALARM or INDICATION.
water stabilization	In ECDIS the reference system relative to the water based on course- and speed-through-water sensors.
waypoint	In ECDIS in conjunction with ROUTE PLANNING, a geographical location (e.g. latitude and longitude) indicating a significant event on a vessel's planned route (e.g. course alteration point, calling in point, etc.).
Worldwide Electronic Navigational Chart Data Base (WEND)	In ECDIS a common, worldwide network of ENC datasets, based on IHO standards, designed specifically to meet the needs of international maritime traffic using ECDIS which conform to the IMO PERFORMANCE STANDARDS.
zoom	In ECDIS a method of enlarging (zoom in) or reducing (zoom out) graphics displayed on a SCREEN.