



## **Economic and Social Council**

Distr.: General  
3 December 2018

Original: English

---

### **Economic Commission for Europe**

#### **Inland Transport Committee**

#### **Working Party on Inland Water Transport**

#### **Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation**

#### **Fifty-fourth session**

Geneva, 13-15 February 2019

Item 9 (b) of the provisional agenda

#### **Promotion of River Information Services and other Information and Communication Technologies in inland navigation:**

#### **Recommendation on electronic chart display and information system for inland navigation (resolution No. 48, revision 3)**

### **Amendments to section 5 “Glossary of terms” of the Recommendation on electronic chart display and information system for inland navigation (resolution No. 48, revision 3)**

#### **Transmitted by the Chair of the International Inland ECDIS Expert Group**

#### **Mandate**

1. This document is submitted in line with cluster 5: Inland Waterway Transport, paragraph 5.1 of the programme of work 2018-2019 (ECE/TRANS/2018/21/Add.1) adopted by the Inland Transport Committee at its eightieth session (20-23 February 2018) (ECE/TRANS/274, para. 123).
2. The annex to this document contains a proposal for amending section 5 “Glossary of terms” of the Recommendation on electronic chart display and information system for inland navigation (resolution No. 48, revision 3), based on the revised Inland ECDIS standard introduced by the European Commission Implementing Regulation amending the Commission Implementing Regulation (EC) No 909/2013 on the technical specifications for the electronic chart display and information system for inland navigation (Inland ECDIS) referred to in Directive 2005/44/EC of the European Parliament and of the Council.
3. The Working Party may wish to start considering the proposed amendments and decide as appropriate.

## Annex\*

## Amendment proposal to section 5, “Glossary of Terms” of the Recommendation on electronic chart display and information system for inland navigation (annex to resolution No. 48, revision 3)

### 1. ~~Sources used to define the terms and abbreviations provided in the text~~

<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
Acronym	6-character-code of the feature/of the attribute.	S-57
<b>Actor</b>	<b>An actor transforms an electrical quantity into another physical quantity (e.g. optical). An actor is the opposite of a sensor.</b>	
AIS	<b>On-board equipment allowing automatic identification of ships for enhanced ship monitoring as well as voyage data recording and other functions. The automatic identification system should comply with the technical and performance standards laid down in Chapter V of the International Convention for the Safety of Life at Sea, 1974 (SOLAS).</b>	<del>S-52 and S-32</del> <b>Resolution No. 57, revised</b>
All information density	All information density (all display) means the maximum amount of SENC information. Here, in addition to the standard display ( <b>Standard Information Density</b> ), also all other objects are displayed, individually on demand.	<del>4.1</del> <b>Section 1 of this annex</b>
Attribute	A defined characteristic of an entity (e.g. the category of a light, the sector limits, the light characteristics etc.).  <b>Definitions for diverse attributes may be derived from the Feature Catalogue for Inland ENC's referred to Appendix 1 “Product Specification for Inland ENC's” of this Annex.</b>	S-57
Attribute copied	<del>S-57/S-100 attributes (with their complete list of attribute values) which were extended according to the requirements of Inland ECDIS. All new attributes have the same name as their source, but written in small case letters.</del>	
CCNR	<del>Central Commission for Navigation of the Rhine; international commission based on the Mannheim Convention. Current Member States are Belgium, France, Germany, the Netherlands and Switzerland. The most important and permanent objectives of CCNR are:</del>  • <del>Prosperity of inland navigation on the Rhine and in Europe</del>	

\* *Notes by the secretariat:*

1. In the present draft, references to the sources contained in chapter 1 of section 5 (deleted in the present document) are replaced by the respective documents (for the full titles, see ECE/TRANS/SC.3/WP.3/2019/7). The Working Party may wish to replace them by the references to chapter 2 of section 1, where the updated list of references is provided.

2. The text proposed for deletion is ~~strikethrough~~, the new text is **bold**.

<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
	<p><del>• ——— Maintenance of a high level of safety in inland navigation and its surroundings.</del></p>	
Cell (chart cell)	A cell is a geographical area containing Inland ENC or bathymetric Inland ENC data.	S-57
CIE colour calibration	Procedure to confirm that the colour specified in <del>IHO</del> S-52 is correctly reproduced on the ECDIS display.	S-52 and S-32
Collection feature	<del>Type of feature containing information about the relationships between other features.</del>	
Compilation scale	<del>The scale with which the chart information meets the IHO requirements for chart accuracy. It is established by the producing hydrographic office and encoded in the ENC.</del>	
Datum	<p>A set of parameters specifying the reference surface or the reference coordinate system used for geodetic control in the calculation of coordinates of points on the earth. Commonly datums are defined as horizontal and vertical datums <b>separately</b>. For the practical use of the datum it is necessary to have one or more well distinctive points with coordinates given in that datum.</p> <p>The horizontal datum is a set of parameters specifying the reference for horizontal geodetic control, commonly the dimensions and the location of a reference ellipsoid. (The horizontal datum must be compliant with WGS 84.)</p> <p>The vertical datum is a surface to which elevations and/or depths (soundings and tide heights) are referred. For elevations commonly a level (equipotential) surface, approximately the mean sea level is used, for depths in many cases low water.</p>	S-52, <del>and</del> S-32 and <b>IEHG Product Specification for Inland ENCs</b>
<del>Datum, horizontal</del>	<del>A set of parameters specifying the reference for horizontal geodetic control, commonly the dimensions and the location of a reference ellipsoid. (The horizontal datum must be WGS 84).</del>	
<del>Datum, vertical</del>	<del>A surface to which elevations and/or depths (soundings and tide heights) are referred. For elevations commonly a level (equipotential) surface, approximately the mean sea level is used, for depths in many cases, low water.</del>	
DC	<p><del>Danube Commission; international river commission based on the Belgrade Convention of 1948, currently under revision. Current member States: Austria, Bulgaria, Croatia, Germany, Hungary, Republic of Moldova, Romania, Serbia, Slovakia, Russian Federation and Ukraine. The most important objectives of DC are:</del></p> <p><del>Prosperity of the Danube navigation and its full integration into the European system of transport by inland waterway; and</del></p> <p><del>• ——— Maintenance of a high level of safety of navigation on the Danube.</del></p>	
Differential GPS (DGPS)	<p><del>A form of GPS in which the reliability and accuracy are enhanced by broadcasting a time varying correction message from a GPS monitoring receiver (differential mode) at a known position on shore. The corrections are fed automatically into the GPS receiver on board and used to compute an improved position.</del></p>	

<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
Display base	Minimum information density; means the minimum amount of SENC information that is presented and which cannot be reduced by the operator, <b>consisting</b> of information that is required at all times in all geographic areas and under all circumstances.	IMO Resolution MSC.232(82)
Display scale	The ratio between a distance on the display and a distance on the ground, normalised and expressed as a ratio, e.g. 1:10 000.	S-52 and S-32
EBL	Electronic Bearing Line	<b>4.5 Section 4 of this annex</b>
ECDIS	Electronic Chart Display and Information System (ECDIS) means 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 SOLAS Convention, as amended, by displaying selected information from <del>a system electronic navigational chart</del> (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.	IMO Resolution MSC.232(82)
Edge	A one-dimensional spatial object, located by two or more coordinate pairs (or two connected nodes) and optional interpolation parameters.	S-57
Electronic chart	Very broad term to describe the data, the software, and the electronic system, capable of displaying chart information. An electronic chart may or may not be equivalent to the paper chart required by the SOLAS <b>Convention</b> .	S-52 and S-32
ENC	Electronic Navigational Chart; the data base, standardised as to content, structure and format, issued for use with ECDIS on the authority of government authorised 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.	IMO Resolution MSC.232(82)
ENC cell	The geographic division of ENC data for distributing purposes.	IEC Guideline 61174, edition 3.0
<b>ETSI</b>	<b>European Telecommunications Standards Institute</b>	
Enumeration	A specific quality or quantity assigned to an attribute (e.g. 'leading light', the limiting angles, the code specifying the light's colour – see attribute).	IEHG Inland ENC Feature Catalogue
Feature	An identifiable set of information. A feature may have attributes and may be related to other features.  A digital representation of all or a part of an entity by its characteristics (attributes), its geometry, and (optionally) its relationships to other features (e.g., the digital description of a light sector specifying, amongst others, sector limits, the colour of the light, the visibility range, etc., and a link to a light tower, if any). <b>Definitions for diverse features may be derived from the Feature Catalogue for Inland ENCs referred to in Appendix 1 to this Annex.</b>	S-52 and S-32

<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
Feature catalogue	The comprehensive list of currently identified features, attributes and enumerations which are allowed for the use in Inland ENC.	IEHG Inland ENC Feature Catalogue
Feature copied	<del>S-57 features (with their complete set of attributes) which were extended according to the requirements of Inland ECDIS. All new features have the same name as their source, but are written in small case letters.</del>	
Feature Data Dictionary	<del>A feature data dictionary specifies independent sets of features and attributes that may be used to describe geographic information in a particular context.</del>  A feature data dictionary may be used to develop a feature catalogue.	
File	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.	S-52 and S-32
<b>GNSS</b>	<b>Global Navigation Satellite System (GNSS) is a system that uses satellites to provide autonomous geospatial positioning.</b>	
Geo Feature	<del>Type of feature containing the descriptive characteristics of a real world entity.</del>	
Geometric Primitive	<del>One of three basic geometric units of representation: point, line and area.</del>	
Heading	The direction in which the longitudinal axis of a craft is pointed, usually expressed as an angular distance from north clockwise through 360 degrees (true, magnetic or compass).	S-52 and S-32
Head-up display	<del>The information presented shown</del> on the display (radar or ECDIS) is directed so that the vessel's heading is always pointing upward. This orientation corresponds to the <b>visual</b> view from the bridge in direction of the vessel's heading.  This orientation may require frequent rotations of the display content. Changing the <del>ship's</del> vessel's course or yawing of the vessel may render this unstabilised orientation mode <del>unreadable illegible</del> .	S-52 and S-32
<b>Human Machine Interface (HMI)</b>	<b>The user interface or human-machine interface is the part of the machine that handles the human-machine interaction. The engineering of the human-machine interfaces is enhanced by considering ergonomics (human factors). There are many ways to develop human-machine interface (HMI) screens for machine and process automation applications. Guidelines, standards and handbooks covering the HMI design include those published by ISA, ASM, ISO, and NUREG.</b>	
IEC	International Electrotechnical Commission: An international (non-governmental) organization which produces world standards for electrical and electronical engineering with the objective of facilitating international trade.	S-52 and S-32
IHO	International Hydrographic Organization: Coordinates the activities of national hydrographic offices; promotes standards and provides advice to developing countries in the fields of hydrographic surveying and production of nautical charts and publications.	S-52 and S-32

<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
IHO registry	IHO Geospatial Information Infrastructure Registry. A registry is the information system on which a register is maintained. In the case of S-100 IHO hosts a registry that provides a facility to store various registers of hydrographic-related information.	<b>IENC Domain in the S-100 Registry</b>
<del>(IHO) S 32 App.1</del>	<del>Hydrographic Dictionary – Glossary of ECDIS Related Terms.</del>	
<del>(IHO) S 52</del>	<del>Specifications for Chart Content and Display Aspects of ECDIS.</del>	<del>2</del>
<del>(IHO) S 52 App. 1</del>	<del>Guidance on Updating the Electronic Navigational Chart.</del>	<del>2</del>
<del>(IHO) S 57</del>	<del>IHO Transfer standard for Digital Hydrographic Data.</del>	<del>3</del>
<del>(IHO) S 57 App. A</del>	<del>IHO Object Catalogue.</del>	<del>3</del>
<del>(IHO) S 57 App. B</del>	<del>ENC Product Specifications.</del>	<del>3</del>
<del>(IHO) S 62</del>	<del>ENC Producer Codes.</del>	
IMO	International Maritime Organization: Formerly called IMCO, IMO is <del>a</del> the specialized agency of the United Nations responsible for maritime safety, efficiency of navigation and prevention of marine pollution from ships.	S-52 and S-32
Information Mode	Means the use of the Inland ECDIS for information purposes only without overlaid radar image.	<b>4.1 Section 1 of this annex</b>
Inland AIS	<del>AIS for the use in inland navigation and interoperable with (maritime) AIS – technically enabled by amendments and extensions to the (maritime) AIS. Automatic identification system for inland waterway vessels as set out in the International Standard for Tracking and Tracing on Inland Waterways (VTT) (resolution No. 63).</del>	<b>International Standard for Tracking and Tracing on Inland Waterways (VTT) (resolution No. 63)</b>
Inland ECDIS	An Electronic Chart Display and Information System for inland navigation, displaying selected information from an Inland System Electronic Navigational Chart (Inland SENC) and optionally, information from other navigation sensors.	<b>4.1 Section 1 of this annex</b>
Inland ENC (IENC)	Inland Electronic Navigational Chart (IENC) means the database, standardised as to content, structure and format, for use with inland electronic chart display and information systems operated on-board of vessels transiting inland waterways. An IENC is issued by or on the authority of a competent government agency, and conforms to standards initially developed by the International Hydrographic Organization (IHO) and refined by the Inland ENC Harmonization Group. An <del>Inland ENC</del> <b>IENC</b> contains all the chart information necessary for safe navigation on inland waterways and may contain supplementary information in addition to that contained in the paper chart (e.g. sailing directions, machine-readable operating schedules, etc.) which may be considered necessary for safe navigation and voyage planning.	<b>4.1 Section 1 of this annex</b>

<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
Inland ENC domain	Domain within the IHO Geospatial Information Infrastructure Registry dedicated for Inland ENC-related entries.	<b>IENC Domain in the S-100 Registry</b>
Inland SENC	Inland System Electronic Navigational Chart: a database resulting from the transformation of the Inland ENC by Inland ECDIS for appropriate use, updates to the Inland ENC by appropriate means and other data added by the mariner. It is this database that is actually accessed by the Inland ECDIS for the display generation and other navigational functions. The Inland SENC may also contain information from other sources.	<b>4.1-Section 1 of this annex</b>
<del>INT 1</del>	<del>International chart 1 (INT 1) means a specification of symbols, abbreviations and terms to be used in the International Chart Series of IHO. It provides the chart user with a key to symbols, abbreviations and terms used on charts compiled in accordance with the "Chart Specifications of the IHO".</del>  <del>INT 1 contains description entries for features and attributes. It can be seen as the reference to the legend of paper charts.</del>	
Integrated display	Means a head-up, relative-motion picture consisting of the Inland SENC overlaid with the radar-image with matching scale, offset and orientation.	<b>4.1-Section 1 of this annex</b>
Look-up table	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.	S-52 and S-32
<del>M 4</del>	<del>Chart specifications of the IHO (M 4) gives chart specifications for compiling nautical charts, together with agreed symbols and abbreviations adopted for general use by Member States. M 4 also provides regulations for INT Charts.</del>  <del>M 4 contains description entries for features and attributes.</del>	
<del>Meta object</del>	<del>A feature which contains information about other features.</del>	
Navigation mode	Means the use of the Inland ECDIS for conning the vessel with overlaid radar image.	<b>4.1-Section 1 of this annex</b>
North-up display	Information shown on the display (radar or ECDIS) with the north direction upward.	S-52 and S-32
Other navigational information	Navigational Information not contained in the SENC, that may be displayed by an ECDIS, such as radar information.	S-52 and S-32
Own vessel	The term which identifies the vessel upon which an ECDIS is operating.	S-52 and S-32
Own vessel's safety contour	The contour related to the own vessel 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.	S-52 and S-32

<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
Performance standard for ECDIS	Standard developed under the authority of IMO to describe the minimum performance requirements for navigational devices and other fittings required by the SOLAS Convention, included in MSC.232(82), as adopted by IMO on 5 December 2006.	S-52 and S-32
Pick report (feature report)	The result of querying a displayed point-symbol, line or area for further information from the data base which is not represented by the symbol.	S-52 and S-32
Presentation library for ECDIS	A set of mostly digital specifications, composed of symbol libraries, colour schemes, look-up tables and rules, linking every feature and attribute of the SENC to the appropriate presentation of the ECDIS display. Published by IHO as Annex A, Special Publication No 52 (S-52).	S-52 and S-32
Product specification	A defined subset of the entire specification combined with rules, tailored to the intended usage of the transfer data.  (The ENC Product specification <del>provides</del> <b>specifies</b> the content, structure and other mandatory aspects of an ENC)	S-52 and S-32
(Radar) range	Distance from the radar antenna. For inland navigation the radar range has to be sequential switchable according to the <del>CCNR</del> Radar Regulations.	<del>Annex IX, Parts III to VI, of the EU Directive 2006/87/EC as amended by 2013/49/EU: Requirements applicable to radar installations and rate-of-turn indicators</del> <b>Annex II of Directive 2016/1629 of the European Parliament and of the Council of 14 September 2016 laying down technical requirements for inland waterway vessels</b>
Relative motion display	A relative motion display shows the chart information and radar targets moving relative to the vessel position fixed on the screen.	S-52 and S-32
Route planning	An ECDIS function in which the area is displayed which is needed to study the intended route, to select the intended track, and to mark the track, its way points and navigational notes.	IMO Resolution MSC.232(82)
SCAMIN	The minimum scale at which the feature may be used e.g. for ECDIS presentation.	S-57
SENC	System Electronic Navigational Chart: <b>An internal</b> data base in an Inland ECDIS which results out of the transformation of ENCs and their update files and other data added by the <del>mariner</del> <b>boatmaster</b> . It is this data base that is actually accessed by the ECDIS for the display generation and other navigational functions. The SENC may also contain information from other sources.	S-52 and S-32



<i>Term or abbreviation</i>	<i>Definition</i>	<i>Source</i>
Spatial object	An object which contains locational information about real world entities.	S-52 and S-32
<del>Standard display</del>	<del>Standard Information Density means the default amount of SENC information that must be visible when the chart is first displayed on ECDIS.</del>	
<b>Standard Information Density</b>	<b>The default amount of SENC information that shall be visible when the chart is displayed when ECDIS is switched on. A screen with Standard Information Density (standard display) is the default state of the Inland ECDIS.</b>	<b>Section 1 of this annex</b>
UNECE	<del>United Nations Economic Commission for Europe organizes cooperation on economic and sectoral issues between its 56 member countries including all EU and non-EU European States, Commonwealth of Independent States and North America. In the transport area, UNECE promotes the facilitation of international road, rail, inland waterway and combined transport, particularly through the improvement of transport infrastructure, simplification and harmonization of administrative border crossing procedures and through the harmonization of technical requirements.</del>	
[Vessel] Tracking and Tracing	<del>Tracking: the function of maintaining status information on the vessel, and — if needed — possibly combined with information on cargo and consignments; [tracking tracing]: and retrieving the retrieval of information concerning the whereabouts of the vessel, and — if needed — possibly combined with information on cargo, consignments and equipment [tracing], as set out in the International Standard for Tracking and Tracing on Inland Waterways (VTT) (resolution No. 63).</del>	<b>International Standard for Tracking and Tracing on Inland Waterways (VTT) (resolution No. 63)</b>
True motion display	A display in which the own vessel and each radar target moves with its own true motion, while the position of all charted information remains fixed.	S-52 and S-32
User-defined settings	Means the possibility to use and store a profile of display and operation controls- settings.	<b>4.1 Section 1 of this annex</b>
VRM	Variable Range Marker.	<b>4.5 Section 4 of this annex</b>
WGS 84	World Geodetic System: The geodetic basis for the ‘Navigational Satellite Timing and Ranging – Global Positioning System’, which enables the surveying of the earth and its entities and was developed by the United States Department of Defence. This global geodetic reference system is recommended by IHO for hydrographic and cartographic use.	IEHG Product Specification for Inland ENCs