Edition 2.3

16 October 2012

# Technical Clarifications

# On

# Inland ECDIS Standard

# Edition 2.3

# Content

# 1. Introduction

The "Inland ECDIS Standard" is a document that describes the technical characteristics for Inland **E**lectronic **C**hart **D**isplay and **I**nformation **S**ystems.

As with any technical document some concepts are subject to interpretation. This document presents a series of clarifications for some of these concepts as agreed by the European Expert Group for Inland ECDIS.

This document deals specifically with operational and performance requirements of Inland ECDIS in navigation mode. It acknowledges the fact that some of the specific technical paragraphs in the "Inland ECDIS Standard", Edition 2.3 might require interpretations as to their precise, intended meaning. Consequently, this document presents a set of unifying recommendations that will, hopefully, result in a standardized application of these paragraphs by potential manufacturers, system integrators as well as users of the systems.

# 2. Technical Clarifications on Inland ECDIS Standard

**Important General Remark**

Every clarification of this Chapter is presented in a uniform way:

- Every clarification is introduced in the appropriate context of the "Inland ECDIS Standard", which is always quoted as a whole section. This is done to ensure, that all clarifications are to be understood in their appropriate context.

- The verbatim text of the "Inland ECDIS Standard" is given in *italics*; additions by the clarification are given upright and underlined as of previous clarification editions and upright and double underlined in the present edition. Deleted text portions are identified with ~~strike-out~~ as of previous clarification editions and ~~double strike~~ out in the present edition.

- For every clarification a rationale is given to allow complete understanding as to why a clarification was needed also. Eventually, the clarifications will be incorporated into a future revision of the "Inland ECDIS Standard".

- A date of when the clarification was drafted by the European Expert Group for Inland ECDIS is given.

- A comment contains additional information on the clarification itself. A future substantial change of the clarification results in the creation of a legacy issue. Any future change for those clarifications should therefore be done with the utmost caution.

## 3. Technical clarifications on Inland ECDIS Standard; Edition 2.3

## 3.1. Navigation mode

Reference: Inland ECDIS Standard Section 1, § 5.2 Navigation mode.

### 3.1.1. Rational for Clarification

According Inland ECDIS Standard Section 1, § 5.2 (j) Navigation mode, the objects given in Inland ECDIS Standard Section 1, § 3.1 Contents and provision of Inland ENCs, shall always be visible and shall not be obscured by other objects.

Inland ECDIS Standard Section 1, § 4.5 Display of radar information, requires that the radar image shall have the highest display priority.

Radar performance standard ETSI 302194 § 7.1.11 Nautical information and navigation lines, requires that the radar image may only be superposed by heading line, bearing lines, range rings and navigation lines.

Clarification is necessary which objects shall always be visible and not be obscured by other objects.

### 3.1.2. Proposed Clarifying Text

### ECDIS Standard Section 1, § 5.2 (j) Navigation mode

*(j) In navigation mode, the data according to Chapter 3.1.c), first to seventh indent of this Section and the following elements shall always be visible and shall not be obscured by other objects.*

- Headline line (as required by ETSI 302194),
- Bearing line (as required by ETSI 302194),
- Range rings (as required by ETSI 302194),
- Navigation lines (as required by ETSI 302194),
- P-Lines,
- Buoys,
- Inland AIS symbols,
- Inland AIS labels (if displayed),
- AtoN information.

### 3.1.3. Date of amendment: May 16th 2017

### 3.1.4. Comment

Care must be taken if two or more objects given in ECDIS Standard Section 1, § 5.2 (j) Navigation mode, or the radar image, have to be draw at the same position on top of each other. Semi-transparency or similar technics must be applied to fulfill the requirement that any of the listed objects shall not obscured.

## 3.2. Language

Reference: Inland ECDIS Standard Section 4A, § 1.6 Language.

### 3.2.1. Rational for Clarification

It is very difficult for the type approval authority to check each language version of the ECDIS system according Inland ECDIS Standard Section 4A, § 1.6 Language.

On the other hand the manufacturer of the Inland ECDIS has a self-interest to have translations in other languages in high quality.

Clarification is necessary how type approval authority shall deal with language versions.

### 3.2.2. Proposed Clarifying Text

**Inland ECDIS Standard Section 4A, § 1.6 Language**

*Additional national versions of a type-approved Inland ECDIS* in navigation mode *shall reapply for type approval to be checked for the translation of the user interface.* The type approval authority which performs the type approval process of an Inland ECDIS system in navigation mode can request an expertise by a certified translator regarding the correct translation in a specific language from the system manufacturer.

### 3.2.3. Date of amendment: May 16th 2017

### 3.2.4. Comment

The manufacturer shall inform the type approval authority about any language version.

In addition the manufacturer shall give information to the type approval authority by whom the translation process was done (e.g. translation service).

The type approval authority shall only request an expertise by a certified translator if there is a suspicion that the translation is not of high quality.

The cost of the expertise has to be paid by the applicant.

## 3.3. Safety limits

Reference: Inland ECDIS Standard Section 1, § 4.6 Safety limits.

### 3.3.1. Rational for Clarification

Clarification is necessary what is meant by the term safety limits.

### 3.3.2. Proposed Clarifying Text

**Inland ECDIS Standard Section 1, § 4.6 Safety limits**

*(…)*

*(c) It shall be possible for the skipper to select safety <u>depth</u> limits.*

*(d) Inland ECDIS shall indicate the falling short of the safety <u>depth</u> limits.*

### 3.3.3. Date of amendment: May 16<sup>th</sup> 2017

### 3.3.4. Comment

No comment.

## 3.4. Picture colors

Reference: Inland ECDIS Standard Section 4, § 4.9 Picture colors.

### 3.4.1. Rational for Clarification

According to Inland ECDIS Standard Section 4, § 4.9 Picture colors, at least the color tables bright day, white-back day, black-back day, dusk and night shall be supported. There has been a change in "S-52 –Specifications for chart content and display aspects of ECDIS", edition 6.0 from March 2010: In article 4.5, "The colour tables", only DAY, DUSK and NIGHT shall be supported.

Clarification I necessary what color combinations shall be supported.

### 3.4.2. Proposed Clarifying Text

**Inland ECDIS Standard Section 4, § 4.9 Picture colors**

*At least the colour combinations included in the IHO-S-52 Presentation Library, Chapter 4 and 13 (colour tables) for ~~bright day, white-back day, black-back day, dusk and night~~ DAY, DUSK and NIGHT shall be supported.*

### 3.4.3. Date of amendment: May 16<sup>th</sup> 2017

### 3.4.4. Comment

This change has already been adopted for Inland ECDIS Standard edition 2.4.

## 3.5. Input and editing of skippers' own chart entries

Reference: Inland ECDIS Standard Section 4, § 4.12 Input and editing of skippers' own chart entries.

### 3.5.1. Rational for Clarification

Clarification is necessary if it shall be possible to input and edit skipers' own chart entries also in navigation mode (headup orientation).

### 3.5.2. Proposed Clarifying Text

**Inland ECDIS Standard Section 4, , § 4.12 Input and editing of skippers' own chart entries**

*(a) Inland ECDIS equipment shall allow input, storing, modifying and deletion of additional chart information by the skipper (skippers' own features).*

*(b) These own chart entries shall be distinguishable from the SENC data, and shall not*

*overlay or degrade the radar picture.*

The skipper shall be able to add at least own single point – objects in navigation mode without switching to information mode.

### 3.5.3. Date of amendment: May 16th 2017

### 3.5.4. Comment

No comment.

## 3.6. Radar picture presentation and overlay

Reference: Inland ECDIS Standard Section 4, § 4.14 Radar picture presentation and overlay.

### 3.6.1. Rational for Clarification

Inland ECDIS Standard Section 4, § 4.14 Radar picture presentation and overlay, requires that the chart is switched off if Inland ECDIS detects an alarm condition.

Inland ECDIS Standard gives no information how to proceed if radar image is not available.

Clarification is necessary how to proceed if radar image fails (i.e. not available).

### 3.6.2. Proposed Clarifying Text

**Inland ECDIS Standard Section 4, § 4.14 Radar picture presentation and overlay**

*(i) If the quality and plausibility monitoring of the Inland ECDIS equipment detect that the chart cannot be oriented and/or positioned with the accuracy required by these technical specifications, an alarm shall be presented on the display and the chart shall be switched off automatically.* If there is no radar signal available, the information mode shall be displayed. In both cases a warning or an alarm shall be given. The switching back to navigation mode shall be done automatically after radar signal is available again. The switching to information mode or navigation mode shall always be possible by manual action.

### 3.6.3. Date of amendment: May 16th 2017

### 3.6.4. Comment

No comment.

## 3.7. Directly accessible operation controls

Reference: Inland ECDIS Standard

Section 4, § 4.15   Inland ECDIS functions with immediate access
Section 1, § 4.4f    Display of SENC information
Section 4, § 4.14h  Radar picture presentation and overlay
Section 1, § 5.2f    Navigation mode
Section 4, § 4.16   Permanently visible function parameters
Section 4, § 4.1     Operating mode
Section 1, § 5.3     Operation and control elements
Section 4, § 3.3     Performance of operation controls

ETSI Standard 302 194.

### 3.7.1. Rational for Clarification

As it is not permitted to display information within the radar picture the space for giving this information is quite limited.

In addition according to Inland ECDIS standard (section 1, 5.3, section 4, 3.3) the design shall follow ergonomic principles, being userfriendly, simple and the number of operational controls shall be as low as possible and restricted to the required number.

On the other hand a lot of control elements and function parameters are required to be displayed at the highest menu level and / or accessible by only one mouse click:

- STBY/ON, RANGE, TUNING, GAIN, STC, FTC, VRM, EBL, SHM (Heading line on/off control), RANGE, BRILLIANCE, COLOURS, INFORMATION DENSITY

- information density, switch off the chart or radar picture (i.e. change from information to navigation mode or vise versa), remove either the ECDIS or the radar information (i.e. change from information to navigation mode or vise versa)

The following function parameters shall always be visible:

- actual RANGE, sensor STATUS (radar tuning, position quality, alarms), selected WATER LEVEL (if available), selected SAFETY DEPTH (if available), selected INFORMATION DENSITY, operating mode.

It is not a question that the items listed in ETSI 7.2.1 (STBY/ON; RANGE; tec.) shall have their own directly accessible controls as the radar overlay system is treated as a radar device.

The pure radar device has to implement all the pure radar specific elements; the screen is full of information presented in a flat and ungrouped manner.

For Inland ECDIS in navigation mode even more information must be displayed and brought into line with the requirement of the principles of user-friendly design.

Clarification is necessary which information is really important to be accessible in a one-click action.

### 3.7.2. Proposed Clarifying Text

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The radar related items (STBY/ON; RANGE; TUNING; GAIN; STC; FTC; VRM; EBL; SHM) shall be accessible directly.

The function parameter (actual RANGE; sensor STATUS (radar tuning, position quality, alarms); selected WATER LEVEL (if available); selected SAFETY DEPTH (if available); selected INFORMATION DENSITY; operating mode) shall also always be visible.

The items "RANGE; BRILLIANCE; COLOURS; INFORMATION DENSITY, INFORMATION DESITY; SWITCH OFF CHART OR RADAR PICTURE (switch between information and navigation mode)" may be combined into groups. Each item shall be accessible by one mouse click. This means that each group has to have a "sensitive" button; when the mouser pointer hovers over this button the button extends to a group where the setting can be done by just one click. After the click, the group collapses to the sensitive button automatically.

The sensitive button shall be placed at the edge in the lower part of the screen. The button shall be marked with a significant symbol.

Other intuitive concepts may also be applicable.

### 3.7.3. Date of amendment: May 16th 2017

### 3.7.4. Comment

Any change of this item is **not** yet part neither of Inland ECDIS standard 2.3 nor of 2.4. After collecting and discussing the experience with this rules a change request should be written for Inland ECDIS standard version 2.5.

## 3.8. Fading out Inland AIS symbols

Reference: Inland ECDIS Standard

Section 4, § 4.14f       Radar picture presentation and overlay
Section 4, § 8.3.1c     Test of the radar overlay
Section 1, § 5.2l       Navigation mode .

### 3.8.1. Rational for Clarification

The Inland ECDIS Standard requires a user-defined range where information from derived tracking and tracing devices (i.e. Inland AIS devices) shall be faded out.

According to section 4, 4.14 and 8.3.1 it shall be user-definable, so it might be switched off by shipmaster.

The fading out of Inland AIS symbols might be lead to misleading interpretation of the traffic situation, if there is no indicator on the display.

Clarification is necessary how to implement this feature in Inland ECDIS in navigation mode.

### 3.8.2. Proposed Clarifying Text

**Inland ECDIS Standard Section 4, § 4.14 Radar picture presentation and overlay**

*(f) The overlaid information derived from tracking and tracing devices regarding the position and orientation of other vessels shall be faded out at a user-definable range.* The activation of this feature and the selected range of the restricted area shall be indicated on the display.

**Inland ECDIS Standard Section 4, § 8.3.1 Test of the radar overlay**

*(c) The overlay of information derived from tracking and tracing devices regarding the position and orientation of other vessels shall be faded out at a user-definable range.* The activation of this feature and the selected range of the restricted area shall be indicated on the display.

**Inland ECDIS Standard Section 1, § 5.2 Navigation mode**

*(l) As tracking and tracing information (for example AIS) of other vessels is useful for the planning of the passing, but of no use during passing itself, tracking and tracing (AIS) symbols shall not disturb the radar image during passing and shall be faded out*

*therefore. Preferably the application shall allow the skipper to define the area where the symbol is faded out.*

<u>The activation of this feature and the selected range of the restricted area shall be indicated on the display.</u>

### 3.8.3. Date of amendment: May 16th 2017

### 3.8.4. Comment

The restricted area is understood as a circle area around the ship's own position in radar picture.

The fading out of Inland AIS symbols is an important feature which should be implemented by manufacturer on a mandatory base.

If this feature may also be applied on special groups of Inland AIS devices (e.g. class B devices) the group shall be indicated unambiguously and during the whole time of activation (e.g. by text information).

## 3.9. Radar picture presentation and overlay – COG / heading

Reference: Inland ECDIS Standard Section 1, § 5.1e Radar picture presentation and overlay.

### 3.9.1. Rational for Clarification

The Inland ECDIS Standard requires that the orientation of other vessels by a directed triangle or a true outline shall be not presented if the heading of these other vessels is not available.

Clarification is necessary what is meant by "heading".

### 3.9.2. Proposed Clarifying Text

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### 3.9.3. Date of amendment: May 16th 2017

### 3.9.4. Comment

Course over ground (COG) gives – as the name implicates – the course over ground and not the heading of the vessel.

Especially in case of sailing with low speed and in case of high rate of turn the COG might vary significantly from heading.

As a result COG is not recognized as a source of heading information.

## 3.10. Range rings distance

References:

Inland ECDIS Standard Section 4, § 4.7       Ranges / Range rings
ETSI Standard 302 194 § 7.1.7.3              Range scales and fixed range rings.

### 3.10.1. Rational for Clarification

In Inland ECDIS standard 2.3, section 4, § 4.7, Ranges / Range rings, for ranges higher than 4000 m range rings are required each 800 m.

In radar performance standard ETSI 302194, article 7.1.7.3, for ranges higher than 4000 m range rings are required each 1000 m.

Clarification is necessary what value has to be implemented.

### 3.10.2. Proposed Clarifying Text

**Inland ECDIS Standard Section 4, § 4.7a Ranges / Range rings**

*(a) In navigation mode the following fixed ranges and range rings are prescribed according to the radar regulations:*

| *Range* | *Range rings* |
|---------|---------------|
| *500 m* | *100 m* |
| *800 m* | *200 m* |
| *1,200 m* | *200 m* |
| *1,600 m* | *400 m* |
| *2,000 m* | *400 m* |
| *4,000 m* | ~~*800 m*~~ <br><br> 1000 m |

### 3.10.3. Date of amendment: May 16<sup>th</sup> 2017

### 3.10.4. Comment

As it is a highly radar specific item the value of the radar standard should be applied.

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