

DRAFT – Annex B (Symbols)  
IEC Standard 62288



<p>For IEC use only</p>	<p>Issue 1</p> <p>2003-06-17</p>
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**INTERNATIONAL ELECTROTECHNICAL COMMISSION**

**TECHNICAL COMMITTEE No 80: Maritime navigation and radiocommunication equipment and systems**

**WORKING GROUP No 13: Presentation of navigation related information**

**Working Paper for the 8<sup>th</sup> meeting**

**to be held at Raymarine in Portsmouth, Hampshire, United Kingdom  
from 22<sup>st</sup> to 24<sup>th</sup> September 2003.**

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**Title: Annex B Colours and Symbols**

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## **Annex B (normative)**

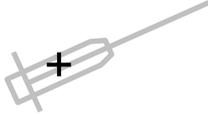
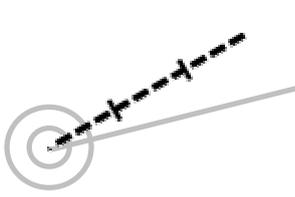
### **Symbols and colours presented on the display**

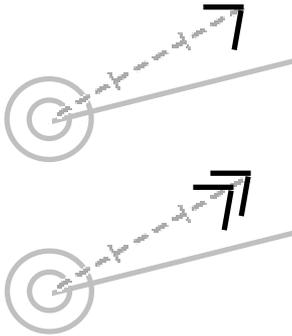
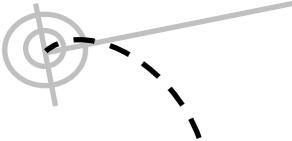
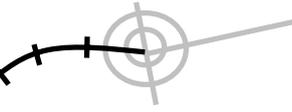
This Annex defines symbols for the display of operational information under different modes of presentation. For the application of these symbol definitions, it must be considered that:

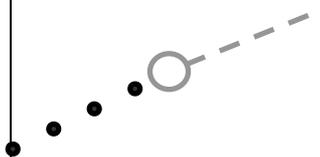
- Only the minimum symbol sizes are specified. The maximum size as well as the line thickness is up to the choice of the manufacturer.
- For a number of symbols, optional variants of presentation are listed. The application of the available options is not restricted to a distinct mode of presentation.
- Symbol colours are defined by reference to the colour tokens as defined in IHO standard S-52, Appendix 2, Colour & Symbols Specifications for ECDIS.

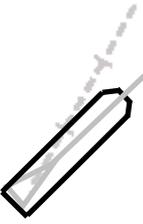
Each of the three ECDIS colour tables specified in IHO S-52 for day, dusk and night conditions specifies a full set of these colour tokens with colour values defined in the standard CIE x,y,L coordinates. Colour accuracy and separation requirements are as defined in IEC 61174. The colours defined by these colour token references maintain the contrast of symbols and text against the colours of the chart background and also maintain the discrimination of symbols and graphics between each other under all ambient light conditions.

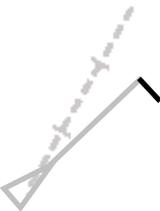
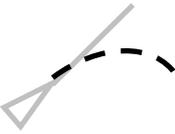
- [These colour definitions apply to the display of the symbols when they are used with a chart presentation in the background. [Consider relaxing the absolute colour accuracy requirement for presentations that do not include chart display.]

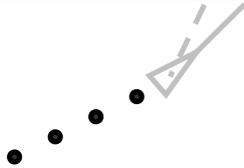
Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>Ship Symbol Own Ship</b>			
<b>Symbol Own Ship</b>	<p>Double circle, located at own ship's reference position.</p> <p>The outer circle shall not be less than 6 mm in diameter.</p> <p>Use of this symbol is optional if OS position is shown by the combination of Heading Line and Beam Line.</p> <p>colour=ships</p>		
<b>True scale outline Own Ship</b>	<p>True scale outline located relative to own ship's reference position, oriented along own ship's heading.</p> <p>Used on small ranges/large scales if individual standard requires</p> <p>colour=ships</p>		
<b>Radar Antenna Position, Own Ship</b>	<p>Cross, located on true scale outline of ship at the position of the radar antenna that is the current source of displayed radar video.</p> <p>colour=ships</p>		
<b>Heading line Own Ship</b>	<p>Solid line thinner than speed vector line style, drawn to the bearing ring or of fixed length if bearing ring not displayed. Origin at own ship's reference point</p> <p>Colour=ships</p>	 <p>Changes needed: 60936 61174</p>	
<b>Beam line Own Ship</b>	<p>Solid line of fixed length; optionally length variable by operator. Midpoint at own ship's reference point.</p> <p>Colour=ships</p>		
<b>Speed Vector Own Ship Default state</b>	<p>Dashed line – short dashes with spaces approximately twice the line width.</p> <p>Time increments between the origin and endpoint shall be marked along the vector using short intersecting lines.</p> <p>Colour=ships</p>	 <p>Changes needed: 60936 61174</p>	

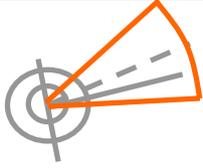
Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>Water/Ground stabilization.</b>	<p>Water stabilised: Optionally one arrow</p> <p>Ground stabilised: optionally two arrows</p> <p>Colour=ships</p>	<p>Indication of the selected stabilisation mode is required within the user interface.</p> <p>In addition, arrowhead symbols may optionally be used.</p> <ul style="list-style-type: none"> <li>- One arrowhead for water stabilisation</li> <li>- Two arrowheads for ground stabilisation</li> </ul>  <p>Change needed: 60936 61174</p>	
<b>Path prediction</b>	<p>A curved vector may be provided as a path predictor</p> <p>Colour=ships</p>		
<b>Past Track Own Ship Primary source</b>	<p>Thick line</p> <p>Optional time marks allowed</p> <p>Colour=pstrk</p>		
<b>Past Track Own Ship Second source</b>	<p>Thin line.</p> <p>Optional time marks allowed.</p> <p>Colour=sytrk</p>		
<b>ARPA target ship symbol</b>			
<b>Normal state ARPA</b>	<p>Solid filled or unfilled circle located at target position.</p> <p>[Luminance control independent of radar video.]</p> <p>colour=arpat</p>		

Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>Speed Vector ARPA Targets Default state</b>	Dashed line – short dashes with spaces approximately twice the line width. Optionally, time increments, may be marked along the vector. [Luminance control independent of radar video] Colour= arpat	  Change needed: 60872	
<b>Acquire state ARPA</b>	Circle segments located at tracked target position  colour=arpat	  (example shown with radar video) Change needed: 60872	
<b>Danger state ARPA</b>	Bold red solid circle (may be larger) and vector if displayed, both flashing until acknowledged. colour=dngl	  Change needed: 60872	
<b>Lost state ARPA</b>	Bold lines across the circle flash until acknowledged colour=arpat	  Change needed: 60872	
<b>Target in guard zone ARPA</b>	Bold red circle segments (may be larger), flashing until acknowledged.  colour=dngl	  (example with radar video)  Change needed: 60872.	
<b>Selection symbol ARPA</b>	Square indicated by its corners located at target position. Fixed orientation. Colour=arpat	  Change needed: 60872	
<b>Past Track ARPA Target</b>	Dots Colour=arpat		

Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>Association of AIS and ARPA target data.</b>	When an association has been detected between AIS data and ARPA tracking, the target shall be indicated by the AIS target symbols defined below.	Refer to AIS symbols	
<b>AIS target Ship symbol</b>			
<b>Default state AIS target</b>	Triangle, oriented by heading or COG if heading missing. No heading line or vector may be shown. Colour=arpat The largest dimension of the symbol shall be greater than 2.5mm The reported position should be located at centre and half the height of the triangle		
<b>Active state AIS target</b>	Triangle, oriented by heading or COG if heading missing. The COG/SOG and heading are displayed Colour=arpat The reported position should be located at centre and half the height of the triangle		
<b>Active state AIS target – true scale outline</b>	A true scale outline may be added to the triangle symbol. Located relative to reported position and according to reported position offsets, beam and length. Oriented along own ship's heading. Used on small ranges/large scales if individual standard requires Colour=arpat		
<b>Danger state AIS target</b>	Bold red triangle, heading and vector flashing until acknowledged, size may be increased Colour=dnghl		
<b>Lost state AIS target - Position data not received.</b>	Triangle with bold solid cross, flashing until acknowledged. Triangle oriented per last known value. Cross has fixed orientation. Colour=arpat		
<b>Selection symbol AIS target</b>	Square indicated by corners drawn around the target symbol Colour=arpat		

Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>Heading line for activated state of AIS</b>	Solid line thinner than speed vector line style, length twice of the length of the triangle symbol. Origin of the heading line is the apex of the triangle. If true scale outline is used the origin is the reported position. Colour=arpat	 Change needed: 60936.	
<b>Indicating turn</b>	Turn indicated by flag of fixed length added to heading line. Colour=arpat		
<b>Speed Vector AIS target Activated state</b>	Dashed line – short dashes with spaces approximately twice the line width.  Optionally, time increments, may be marked along the vector. Colour= arpat		
<b>Speed Vector AIS target Activated state</b>  <b>Water/Ground stab.</b>	No symbol	Indication of stabilisation mode within the user interface is required.  No extra graphic representation required. Change needed: 60936,61174	
<b>Speed Vector AIS target Activated state</b>  <b>Indicating turn</b>	A path predictor may be provided as curved vector Colour=arpat		
<b>Speed Vector AIS target Activated state</b>  <b>AIS target for which course over ground is not received.</b>	Dashed ships outline Colour=arpat  [If no speed data, orient toward top of display area or, if available, in the direction of heading]. <b>[Minimum size to be defined, for visible dashes.]</b> [Reconsideration of the need of this symbol if more operational experience has gained – Possible alarm condition to be defined when CPA/TCPA become undetermined.]	 Change needed: 61174	

Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>Past Track AIS contacts</b>	Dots Colour=arpat		
<b>AIS based AtoN</b>			
<b>Real position of charted object</b>	Diamond centred at reported position. (Shown with chart symbol. Chart symbol not required for radar.) Colour=[resbl]  [Symbol size requirement to be based on ECDIS to avoid obscuring chart symbol.]]		
<b>Virtual position</b>	Diamond centred at reported position. Colour=[resbl]		
<b>Navigation Tools</b>			
<b>Cursor</b>	Crosshair (two alternatives, one with open centre). The size of the Cursor symbol shall be at least 6mm. Colour=cursr		
<b>EBL</b>	Manufacturer selectable linestyle and colour/shape Colour=ninfo		
<b>Origin of off-centered EBL</b>	Diameter 2mm minimum. Colour=ninfo	Dot	
<b>Variable Range marker (VRM)</b>	Circle centred around Own Ship. Manufacturer selectable linestyle, visually distinguishable from the primary VRM by line style. Optional second VRM (if required by individual standards) Colour=ninfo		
<b>Range rings</b>	Solid circles Colour= ninfo		
<b>Parallel index lines</b>	Lines with manufacturer selectable linestyle Distinguishable from EBL by line style. Colour= ninfo		

Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>Map lines and Nav lines</b>	Per IEC 60xxx [60936 ] Only allowed to be displayed on radar without chart background		
<b>Additional chart information</b>	Manufacturer selectable linestyle Colour=adinf		
<b>Minimum width of safety contour</b>	Solid line. Fixed 3 pixel width.  Colour=depsec	Change needed: 60936-5	
<b>Alternate route</b>	Dotted line, WP as circles  Colour=aplrt [colour coordinates to be reconsidered]	  Change needed: 60936 61174	
<b>Monitored route</b>	Dashed bold line, WP as circles  Colour=plrte	  Change needed: 60936 61174	
<b>Predicted area of danger (PAD) – Option to be used for AIS and ARPA</b>	Solid line bounding hexagon or elliptical area of CPA/TCPA violation [Luminance control independent of radar video]  Colour= dnghl		
<b>ARPA Acquisition area</b>	Solid line boundary for an area [Luminance control independent of radar video]  Colour=ninfo		
<b>ARPA Guard zones</b>	Solid line boundary for an area [Luminance control independent of radar video]  Colour=ninfo		
<b>Searchlight (area of interest)</b>	Solid line boundary for an area. Colour=dnghl		
<b>ARPA Trial manoeuvre</b>	Large T on screen Colour=ninfo		

Topic	Harmonized Symbology Description	Harmonised Symbology Graphics	
<b>ARPA Test target</b>	Letter X, XX, XT, XXT on screen Colour=ninfo		
<b>Event Mark</b>	Rectangle with diagonal line, added by text "MOB" for man over board cases Colour=ninfo		
<b>Mariner's Caution, Info Note</b>	Colour=ninfo		
<b>Manufacturer's Info Note</b>	Colour=adinf		

**Color token descriptions [Ref IHO S52, Appendix 2]:**

<b>TOKEN</b>	<b>IDENTIFICATION</b>
ships	Ship symbol colour
pstrk	Own ship's past track, from primary position source
sytrk	Own ship's past track, from secondary position source
arpat	ARPA target
dnghl	Danger highlight
resbl	Reserved
cursr	Cursor
ninfo	Navigator's information
adinf	Additional information
depsec	Safety contour depth
aplrt	Alternate planned route
plrte	Planned route