

D.3 Abbreviations of Geodetic Data

No.	Geodetic Data	Display to the top screen	DTM sentence	
			Abbreviation	User-defined No.
0	WGS 84	WGS 84	W84	0
1	WGS 72	WGS 74	W74	1
2	Tokyo	TOY	TOY	2
3	North American 1927(USA)	NAS	NAS(*2)	3
4	North American 1927(Canada & Alaska)	NAS	NAS(*2)	4
5	European 1950	EUR	EUR	5
6	Australian Geodetic 1966	AUA	AUA	6
7	Ordnance Survey of Great Britain	OGB	OGB	7
8	North American 1983	NAR	NAR	8
9	No Use	Blank display	-	9
10	No Use	Blank display	-	10
11	Adindan	ADI	ADI	11
12	Arc 1950	ARF	ARF	12
13	Australian Geodetic 1984	AUG	AUG	13
14	Bermuda 1957	BER	BER	14
15	Bogota Observatory	BOO	BOO	15
16	Campo Inchauspe	CAI	CAI	16
17	Chatam Island Astro 1971	CHI	CHI	17
18	Chua Astro	CHU	CHU	18
19	Corrego Alegre	COA	COA	19
20	Djakarta (Batavia)	BAT	BAT	20
21	European 1979	EUS	EUS	21
22	Geodetic Datum 1949	GEO	GEO	22
23	Guam 1963	GUA	GUA	23
24	Hayford 1910	024	024(*1)	24
25	Hjorsey 1955	HJO	HJO	25
26	Indian	IND	IND	26
27	Ireland 1965	IRL	IRL	27
28	Kertau 1948	KEA	KEA	28
29	L. C. 5 Astro 1961	LCF	LCF	29
30	Liberia 1964	LIB	LIB	30
31	Luzon	LUZ	LUZ	31
32	Merchich	MER	MER	32
33	Minna	MIN	MIN	33

No.	Geodetic Data	Display to the top screen	DTM sentence	
			Abbreviation	User-defined No.
34	Nahrwan	NAH	NAH	34
35	Naparima, BWI	NAP	NAP	35
36	Old Egyptian 1907	OEG	OEG	36
37	Old Hawaiian	OHA	OHA	37
38	Pico de las Nieves	PLN	PLN	38
39	Provisional South American 1956	PRP	PRP	39
40	Provisional South Chilean 1963	HIT	HIT	40
41	Puerto Rico	PUR	PUR	41
42	Qornoq	QUO	QUO	42
43	RT 90	043	043(*1)	43
44	Sao Braz	SAO	SAO	44
45	South American 1969	SAN	SAN	45
46	Graciosa Base SW 1948	GRA	GRA	46
47	Timbalai 1948	TIL	TIL	47
48	No Use	Blank display	-	48
49	No Use	Blank display	-	49

D.4 Lists of Terminologies, Units, and Abbreviations

Abbreviation	Term
A	
A/D = AD	Analog/ Digital
A/P = AP	Auto Pilot
AC	Alternating Current
ACC	Actual Course Change
ACCA	Actual Course Change Alarm
ACK	Acknowledge
ACQ	Acquire, Acquisition
ACT	Activate
AIO	Admiralty Information Overlay (additional information to the navigation)
AIS	Automatic Identification System
ALC	Alert LAN Converter
AMP	Amplifiers
AMS	Alert Management System
ANT	Antenna
ARCS	Admiralty Raster Chart Service (A raster chart published by UKHO.)
ARPA	Automatic Radar Plotting Aids
ASCII	American Standard Code for Information Interchange
ASIC	Application Specific Integrated Circuit
AtoN	Aids to Navigation
AUTO = auto	Automatic
Av. = AVE	Average
AVCS	Admiralty Vector Chart Service
AZ	Acquisition Zone
AZI	Azimuth Stabilization Mode
B	
BAM	Bridge Alert Management
BCR	Bow Crossing Range
BCT	Bow Crossing Time
BFT	Beaufort
BNWAS	Bridge Navigational Watch Alarm System
BP	Bearing Pulse
BRG	Bearing
BZ	Bearing Zero

Abbreviation	Term
C	
C UP	Course Up
CA-CFAR	Cell Averaging CFAR
CCRP	Consistent Common Reference Point
CCRS	Consistent Common Reference System
CCU	Central Control Unit
CCW	Counterclockwise
CFAR	Constant False Alarm Rate
CH	Channel
CHG	Change
CID	Conning Information Display
CIF	Companion MPU Interface
CLR	Clear
COG	Course Over the Ground
COM	Communication Port
CONT	Contrast, Control
CONV	Conventional
CORREL	Correlation
CPA	Closest Point of Approach
CPP	Controllable Pitch Propeller
CPU	Central Processing Unit
CTW	Course Through the Water
Curr.	Current
CW	Clockwise
D	
D/N	Day/Night
DC	Direct Current
Def.	Definition
DGPS	Differential GPS
DIFF	Difference
DIR = Dir.	Direction
DISP	Display
DIST	Distance
DR	Dead Reckoning, Dead Reckoned Position
DSC	Digital Selective Calling
DSP	Digital Signal Processor

Abbreviation	Term
E	
EBL	Electronic Bearing Line
ECC	Early Course Change
ECDIS	Electronic Chart Display and Information System
Ed.	Edition
EGC	Enhanced Group Calling
ENC	Electronic Navigational Chart
ENH	Enhance
EOT	End of Track
EP	Estimated Position
EPA	Electronic Plotting Aids
EPFS	Electronic Position Fixing System
EQUIP	Equipment
ETA	Estimated Time of Arrival
F	
FPGA	Field Programmable Gate Array
FTC	Fast Time Constant
FWD	Forward
G	
GC	Great Circle
GIF	Gyro Interface
GLONASS	Global Orbiting Navigation Satellite System
GND	Ground
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GZ	Guard Zone
H	
H UP	Head Up
H/W = HW	HardWare
HASP	Hardware Against Software Piracy
HC	Heading Control
HCS	Heading Control System
HDG	Heading
HDOP	Horizontal Dilution of Precision
HL	Heading Line
HO	Hydrographic Organization
HSC	High Speed Craft

Abbreviation	Term
I	
I/F = IF	Interface
I/O	Input/Output
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IALA-A	IALA - Region A
IALA-B	IALA - Region B
ID	Identification
IMO	International Maritime Organization
IND	Indication
INFO	Information
INIT	Initialisation
INS	Integrated Navigation System
INT	Interval
IP Address	Internet Protocol Address
IR	Interference Rejection
ISW	Interswitch
J	
K	
L	
L/L = LL	Latitude/ Longitude
LAN	Local Area Network
LAT	Latitude
LCD	Liquid Crystal Display
LMT	Local Mean Time
LON	Longitude
LOP	Line of Position
LORAN	Long Range Navigation
LP	Long Pulse
M	
M/E	Main Engine
MAG	Magnetic
MAN	Manual
MAX	Maximum
MBS	Main Bang Suppression
MFDF	Medium Frequency Direction Finding
MHV	Modulator High Voltage
MIC	Microphone
MID	Middle
MIN	Minimum

Abbreviation	Term
MMSI	Maritime Mobile Services Identity Number
MOB	Man Overboard
MON	Monitor
MP	Medium Pulse
MSC	Maritime Safety Committee
MSG	Message
N	
N UP	North Up
NAV = NAVI	Navigation
NAVTEX	Navigational Telex
NE	North East
NFU	Non Follow Up
NLT	Not Less Than
NMEA	National Marine Electronics Association
NMEA0183	NMEA 0183 standards
NMT	Not More Than
No. = NUM	Number
NW	North West
O	
OPE	Operation
OPU	Operation Unit
OSD	Own Ship Data
OVRD	Override
P	
PI	Parallel Index Line
PIN	Personal Identification Number
PL	Pulse Length
PORT	Port/ Portside
POS = POSN	Position
PPI	Plan Position Indicator
PRF	Pulse Repetition Frequency
PROC	Process
PS	Power Supply
PWR	Power
Q	
R	
R	Relative
RADAR	Radio Detecting and Ranging
RAND	Random

Abbreviation	Term
RCID	Raster Chart Issue Date
REF	Reference
REL	Relative
Rev.	Revolution
RIF	Radar I/F Circuit
RL	Rhumb Line
RM	Relative Motion
RM(R)	Relative Motion. Relative Trails.
RM(T)	Relative Motion. True Trails.
RMS	Root Mean Square
RNC	Raster Navigational Chart
RNG	Range
RoRo	Roll On/ Roll Off (Vessel)
ROM	Read Only Memory
ROT	Rate of Turn
RPS	Route Planning System
RX	Receiver
S	
SA	Scheme Administrator
SAR	Search and Rescue
SART	Search and Rescue Transponder
SATNAV	Satellite Navigation
SBAS	Satellite Based Augmentation System
SCL	Serial LAN Converter
SDK	Software Development Kit
SE	South East
SEL	Select
SENC	System Electronic Navigational Chart
Seq	Sequence
SFI	System Function ID
S-JOY	Steering Joystick Controller
SLC	Serial LAN Converter
SOG	Speed Over the Ground
SP	Short Pulse
SPD	Speed
Sprslvl	Spurious Level
SSD	Solid State Drive
SSE	Security Scheme Error
SSR	Solid State Radar

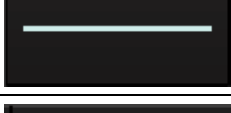
Abbreviation	Term
SSW	Safety Switch
STAB	Stabilised , Stabilisation
STBD	Starboard, Starboard Side
STC	Sensitivity Time Control
STD	Standard
STW	Speed Through the Water
SW HUB	Switching Hub
SYNC	Synchronisation
SYS	System
T	
T	True
T & P	Temporary and Preliminary Notice to Mariners
TCPA	Time to CPA
TCS	Track Control System
TD	Time Difference
TEMP / Temp.	Temperature
TGT	Target
TM	True Motion
TNI	Tune Indicator
TPL	Transferred Line of Position
TRX	Transceiver
TT	Target Tracking
TTG	Time to Go
TX	Transmitter
TXRX	Transmitter Receiver Unit
U	
UNACK	Un-Acknowledge
USB	Universal Serial Bus
UTC	Coordinated Universal Time
V	
VD	Video
VDIN	Video In
VDR	Voyage Data Recorder
Ver.	Version
VHF	Very High Frequency
VOL	Volume
VRM	Variable Range Marker
W	
W UP	Waypoint Up

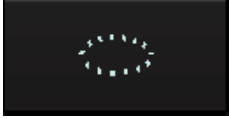
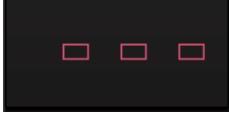
Abbreviation	Term
WGS	World Geodetic System
WIG	Wing-in-ground effect craft
WOL	Wheel Over Line
WPT	Waypoint
WS	Work Station
WTRST	Watch Timer Reset
X	
XTD	Cross Track Distance
XTE	Cross Track Error
XTL	Cross Track Limit, Route Width
Y	
Z	

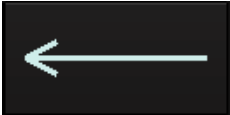
Unit	
bps	bit per second
cm	centimetre
dB	decibel
deg	degree
fm	fathom
ft	feet, foot
h = hr	hour
hPa	hecto pascal
Hz	hertz
kg	kilogram
km	kilometre
kn = kts	knot
m	metre
mbar	millibar
min	minute
mph	mile per hour
NM	nautical mile
RAD	radius
RPM	revolutions per minute
s	second
sm	statute mile

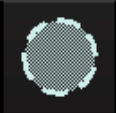
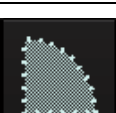
D.5 Icon Button List for User Map

The lists of icon buttons that are used for user map are provided below.

Button name	Icon name	Icon display example	Alert generated when the own ship approaches the object
[Mariner's Mark/Line] button	Information mark		No alert
	Tidal stream		No alert
	Clearing line		No alert
	Highlight		No alert
[Symbol] button	Circle		No alert
	Triangle		No alert
	Square		No alert
	Diamond		No alert
	Multiple mark		No alert
	Warning symbol		Crossing a danger (dangerous symbol)
[Line] button	Simple line(solid line)		No alert
	Simple line(dotted line)		No alert

Button name	Icon name	Icon display example	Alert generated when the own ship approaches the object
[Line] button	Simple line(dashed line)		No alert
	Circle(solid line)		No alert
	Circle(dotted line)		No alert
	Circle(dashed line)		No alert
	Eclipse(solid line)		No alert
	Eclipse(dotted line)		No alert
	Eclipse(dashed line)		No alert
	Arc(solid line)		No alert
	Arc(dotted line)		No alert
	Arc(dashed line)		No alert
	Warning line		Crossing dangerous line
	Arrow(Start To End/Small)		No alert
	Arrow(Start To End/Medium)		No alert

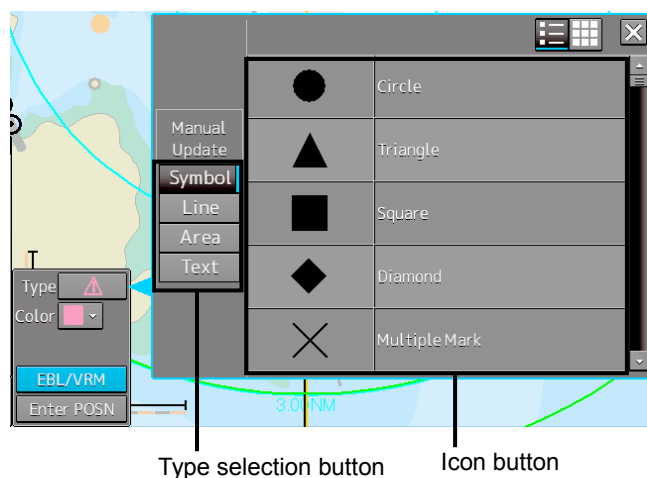
Button name	Icon name	Icon display example	Alert generated when the own ship approaches the object
[Line] button	Arrow(Start To End/Large)		No alert
	Arrow(End To Start/Small)		No alert
	Arrow(End To Start/Medium)		No alert
	Arrow(End To Start/Large)		No alert
	Arrow(Both Direct/Small)		No alert
	Arrow(Both Direct/Medium)		No alert
	Arrow(Both Direct/Large)		No alert
[Area] button	Polygon(solid line)		No alert
	Polygon(dotted line)		No alert
	Polygon(dashed line)		No alert
	Circle(solid line)		No alert
	Circle(dotted line)		No alert

Button name	Icon name	Icon display example	Alert generated when the own ship approaches the object
[Area] button	Circle(dashed line)		No alert
	Eclipse(solid line)		No alert
	Eclipse(dotted line)		No alert
	Eclipse(dashed line)		No alert
	Fan(solid line)		No alert
	Fan(dotted line)		No alert
	Fan(dashed line)		No alert
[Text] button	Text		No alert

D.6 Icon Button List for Manual Update

The lists of icon buttons that are used for user map manual update are provided below.

How to reference the lists



Icon buttons are displayed in list format

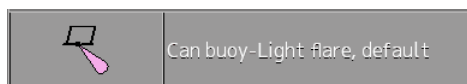
[List categories]

Lists are classified by "Type Selection Button".

- For [Symbol] type icon buttons, refer to "D.6.1 Symbol".
- For [Line] type icon buttons, refer to "D.6.2 Line".
- For [Area] type icon buttons, refer to "D.6.3 Area".

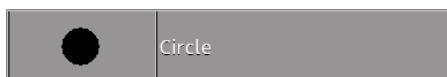
[Names displayed when tooltip of the icon button and the icon button display list are displayed]

The name of the icon button is displayed under "category name-object name". For instance, when the category name is Can buoy and the object name is Light-flare, default, the name is displayed as Can buoy-Light-flare, default.



Exception

- When the category name in the list is enclosed by parentheses, only the object name is displayed without displaying the category name. For instance, when the category name is (General) and the object name is Circle, Circle is displayed.



- When the object name of the list is "(No object)", only the category name is displayed. For instance, when the category name is Barrel buoy and the object name is "(No object)", Barrel buoy is displayed.

D.6.1 Symbol

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(General)	Circle		No alert
	Triangle		No alert
	Square		No alert
	Diamond		No alert
	Multiple mark		No alert
	Warning symbol		Crossing a danger (dangerous symbol)
(Manual Update)	Delete symbol		No alert
(Anchor)	Anchor Point		No alert
	Anchorage Area		No alert
	Anchor Berth		No alert
	Anchor Prohibited Area		No alert
Barrel buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Can buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)

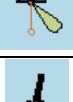
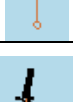
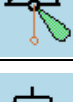
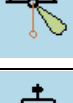
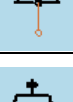
Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Can buoy	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Conical buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Installation buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Mooring buoy, barrel shape	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Mooring buoy, can shape	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy	(No object name)		Crossing a danger (dangerous symbol)
Pillar buoy - Cone point up	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - Cone point down	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - 2 cones point upward	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Pillar buoy - 2 cones point upward	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - 2 cones point downward	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - 2 cones base to base	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - 2 cones point to point	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - Sphere	(No object name)		Crossing a danger (dangerous symbol)

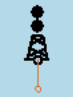
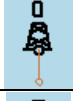
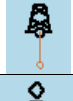
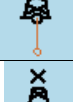
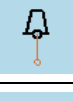
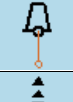
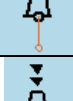
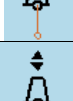
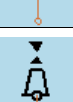
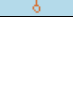
Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Pillar buoy - Sphere	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - 2 spheres	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - Cylinder	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - Board	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)

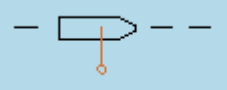
Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Pillar buoy - Cube point up	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
Pillar buoy - Cube point up	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - Flag or other shape	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - T-Shape	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Pillar buoy - X-shape	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Pillar buoy - X-shape	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Spherical buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
Spherical buoy	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Spar buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Super-buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
LANBY, super-buoy	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
LANBY, super-buoy	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Light float	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Light vessel	(No object name)		Crossing a danger (dangerous symbol)
	Light flare, default		Crossing a danger (dangerous symbol)
	Light flare, red		Crossing a danger (dangerous symbol)
	Light flare, green		Crossing a danger (dangerous symbol)
	Light flare, white/yellow		Crossing a danger (dangerous symbol)
Beacon in general	(No object name)		No alert
	Cone point up		No alert
	Cone point down		No alert
	2 cones point upward		No alert
	2 cones point downward		No alert
	2 cones base to base		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Beacon in general	2 cones point to point		No alert
	Sphere		No alert
	2 spheres		No alert
	Cylinder		No alert
	Board		No alert
	Cube point up		No alert
	X-shape		No alert
	Upright cross		No alert
	Besom point down		No alert
	Besom point up		No alert
	T-shape		No alert
Lattice beacon	(No object name)		No alert
	Cone point up		No alert
	Cone point down		No alert
	2 cones point upward		No alert
	2 cones point downward		No alert
	2 cones base to base		No alert
	2 cones point to point		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Lattice beacon	Sphere		No alert
	2 spheres		No alert
	Cylinder		No alert
	Board		No alert
	Cube point up		No alert
	X-shape		No alert
	Upright cross		No alert
	Besom point down		No alert
	Besom point up		No alert
	T-shape		No alert
Beacon tower	(No object name)		No alert
	Cone point up		No alert
	Cone point down		No alert
	2 cones point upward		No alert
	2 cones point downward		No alert
	2 cones base to base		No alert
	2 cones point to point		No alert
	Sphere		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
Beacon tower	2 spheres		No alert
	Cylinder		No alert
	Board		No alert
	Cube point up		No alert
	X-shape		No alert
	Upright cross		No alert
	Besom point down		No alert
	Besom point up		No alert
	T-shape		No alert
(Ports and Harbors)	Berth number		No alert
	Ferry area		No alert
	Cable ferry area		No alert
	Fortified structure		No alert
	Conspicuous fortified structure		No alert
	Fish trap, fish weir, tunny net		No alert
	Fish stakes		No alert
	Fishing harbor		No alert
	Marine farm/aquaculture		No alert
	RoRo terminal		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Ports and Harbors)	Mooring dolphin		No alert
	Deviation mooring dolphin		No alert
	Pile or bollard		No alert
	Yacht harbor, marina		No alert
(Buildings)	Airport		No alert
	Opening bridge		No alert
	Built-up area		No alert
	Non-conspicuous religious building, Christian		No alert
	Conspicuous religious building, Christian		No alert
	Non-conspicuous religious building, non-Christian		No alert
	Conspicuous religious building, non-Christian		No alert
	Minaret		No alert
	Conspicuous minaret		No alert
	Single building		No alert
	Conspicuous single building		No alert
	Cairn		No alert
	Conspicuous cairn		No alert
	Chimney		No alert
	Conspicuous chimney		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Buildings)	Cranes		No alert
	Dome		No alert
	Conspicuous dome		No alert
	Dish aerial		No alert
	Conspicuous dish aerial		No alert
	Flagstaff, flagpole		No alert
	Flare stack		No alert
	Conspicuous flare stack		No alert
	Hulk		No alert
	Monument		No alert
	Conspicuous monument		No alert
	Mast		No alert
	Conspicuous mast		No alert
	Mine, quarry		No alert
	Quarry		No alert
	Refinery		No alert
	Conspicuous refinery		No alert
	Silo		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Buildings)	Conspicuous silo		No alert
	Timber yard		No alert
	Tank		No alert
	Conspicuous tank		No alert
	Tank farm		No alert
	Conspicuous tank farm		No alert
	Tower		No alert
	Conspicuous tower		No alert
	Water tower		No alert
	Conspicuous water tower		No alert
	Radio, television tower		No alert
	Conspicuous radio, television tower		No alert
	Wind-motor		No alert
	Conspicuous wind-motor		No alert
	Wind generator farm		No alert
	Conspicuous wind generator farm		No alert
	Windmill		No alert
	Conspicuous windmill		No alert
(Artificial Feature)	Navigable lock gate		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Artificial Feature)	Non-navigable lock gate		No alert
	Offshore platform		No alert
(Miscellaneous Station)	Coastguard station		No alert
(Caution)	Rescue station		No alert
	Pilot station		No alert
	Signal station		No alert
	Mariner's information note		No alert
	Mariner's caution note		No alert
(Dangerous)	Underwater hazard with a defined depth		Crossing a danger (dangerous symbol)
	Underwater hazard with depth greater than 20 metres		Crossing a danger (dangerous symbol)
	Hazard on the surface		Crossing a danger (dangerous symbol)
	Floating hazard to navigation		No alert Because the object included in ENC does not change to "Isolated danger" depending on the safety contour. This is defined in S-52.
(Obstructions)	Isolated danger of depth less than the safety contour		Crossing a danger (dangerous symbol)
	Obstruction, depth not stated		Crossing a danger (dangerous symbol)
	Obstruction in the intertidal area		No alert Because the object included in ENC does not change to "Isolated danger" depending on the safety contour. This is defined in S-52.
	Obstruction		Crossing a danger (dangerous symbol)

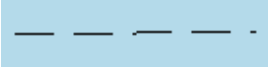
Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Obstructions)	Obstruction in the water which is always above water level		Crossing a danger (dangerous symbol)
	Dangerous underwater rock of uncertain depth		Crossing a danger (dangerous symbol)
	Rock which covers and uncovers or is awash at low water		Crossing a danger (dangerous symbol)
	Wreck showing any portion of hull or superstructure at level of chart datum		Crossing a danger (dangerous symbol)
	Non-dangerous wreck, depth unknown		Crossing a danger (dangerous symbol)
	Dangerous wreck, depth unknown		Crossing a danger (dangerous symbol)
	Direction of buoyage		No alert
	Direction and color of buoyage for approaching harbor in IALA region A (red to port)		No alert
	Direction and color of buoyage for approaching harbor in IALA region B (green to port)		No alert
	Fairway with one-way traffic in direction indicated		No alert
	Fairway with two-way traffic		No alert
	Inshore traffic		No alert
	Recommended traffic direction between parts of a traffic separation scheme, or for ships not needing a deep water route		No alert

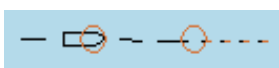
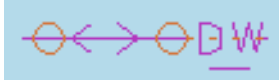
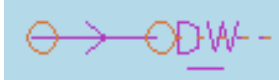
Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Obstructions)	Recommended two-way track as an area, based on fixed marks		No alert
	Recommended one-way track as an area, based on fixed marks		No alert
	Traffic roundabout		No alert
	Reciprocal traffic directions in a two-way route of a traffic separation scheme		No alert
	Single traffic direction in a two-way route part of a traffic separation scheme		No alert
	Traffic crossing area		No alert
	Part of deep water route		No alert
	Reciprocal traffic directions in a two-way part of a deep-water route		No alert
	Traffic direction in a one way lane of a traffic separation scheme		No alert
(Restricted Area)	Prohibited or restricted area		No alert
(Fishing Ground)	Fishing ground		No alert
	Fish haven		No alert
	Fishing or trawling is prohibited or restricted		No alert
(Radio/Radar)	Radio calling-in point for traffic in one direction only		No alert
	Radio calling-in point for traffic in both directions		No alert
	Radio station		No alert
	Radar transponder beacon		No alert
	Radar conspicuous		No alert

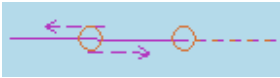
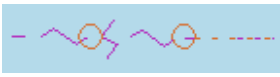
Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Radio/Radar)	Radar reflector		No alert
	Radar scanner		No alert
	Conspicuous radar scanner		No alert
	Retro reflector		No alert
(Fog signal)	Fog signal		No alert
(Local Magnetic anomaly)	Magnetic anomaly at a point		No alert
	Magnetic anomaly along a line or over an area		No alert
	Magnetic variation at a point		No alert
	Magnetic variation along a line or over an area		No alert
(Natural Feature/ Seabed)	Hill or mountain top		No alert
	Conspicuous hill or mountain top		No alert
	Cable area		No alert
	Foul area of seabed safe for navigation but not for anchoring		No alert
	Sand waves		No alert
	Spring		No alert
	Weed, kelp		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Unknown)	? Mark		No alert
	Generic Object		No alert

D.6.2 Line

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(General)	Simple line(solid line)		No alert
	Simple line(dotted line)		No alert
	Simple line(dashed line)		No alert
	Circle(solid line)		No alert
	Circle(dotted line)		No alert
	Circle(dashed line)		No alert
	Eclipse(solid line)		No alert
	Eclipse(dotted line)		No alert
	Eclipse(dashed line)		No alert
	Arc(solid line)		No alert
	Arc(dotted line)		No alert
	Arc(dashed line)		No alert
	Warning line		Dangerous line
	Arrow(Start To End/Small)		No alert
	Arrow(Start To End/Medium)		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(General)	Arrow(Start To End/Large)		No alert
	Arrow(End To Start/Small)		No alert
	Arrow(End To Start/Medium)		No alert
	Arrow(End To Start/Large)		No alert
	Arrow(Both Direct/Small)		No alert
	Arrow(Both Direct/Medium)		No alert
	Arrow(Both Direct/Large)		No alert
(Manual Update)	Deletion by a manual update		No alert
(Anchor)	Boundary of an anchorage area		Dangerous line
	Boundary of an area where anchoring is prohibited or restricted		Dangerous line
(Ferry Routes)	Ferry route		No alert
	Cable ferry route		No alert
(Ports and Harbors)	Fishing stakes		No alert
(Caution)	Boundary of area with a specific caution		Dangerous line
	Boundary of area to be navigated with caution		Dangerous line
(Routes)	Two-way deep water route centerline, based on fixed marks		No alert
	One-way deep water route centerline, based on fixed marks		No alert
	Boundary of a deep water route		No alert

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Routes)	Regulated two-way recommended route centerline, based on fixed marks		No alert
	Regulated one-way recommended route centerline, based on fixed marks		No alert
	Non-regulated recommended two-way track, based on fixed marks		Dangerous line
	Non-regulated recommended one-way track, based on fixed marks		Dangerous line
	Archipelagic Sea Lane		No alert
(Restricted Area)	Boundary of an area where entry is prohibited or restricted		Dangerous line
	Boundary of a restricted area		Dangerous line
(Administrated Area)	Jurisdiction boundary		No alert
(Fishing Ground)	Boundary of an area where trawling or fishing is prohibited or restricted		Dangerous line
(Cable/Pipe)	Boundary of a submarine cable area		Dangerous line
	Submarine cable		No alert
	Oil, gas pipeline, submerged or on land		No alert
	Water pipeline, sewer, etc.		No alert
(Miscellaneous Boundary)	Boundary between IALA-A and IALA-B systems of lateral buoys and beacons		No alert
	Boundary of a navigation feature such as a fairway, magnetic anomaly, etc.		Dangerous line
	Boundary of a submarine pipeline area with potentially dangerous contents		Dangerous line

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(Miscellaneous Boundary)	Boundary of a submarine pipeline area with generally non-dangerous contents		No alert
(Unknown)	? Mark		No alert
	Generic Object		No alert

D.6.3 Area

Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(General)	Polygon(solid line)		No alert
	Polygon(dotted line)		No alert
	Polygon(dashed line)		No alert
	Circle(solid line)		No alert
	Circle(dotted line)		No alert
	Circle(dashed line)		No alert
	Eclipse(solid line)		No alert
	Eclipse(dotted line)		No alert
	Eclipse(dashed line)		No alert
	Fan(solid line)		No alert
	Fan(dotted line)		No alert
	Fan(dashed line)		No alert
	Warning Area(solid line)		Dangerous area
	Warning Area(dotted line)		Dangerous area
	Warning Area(dashed line)		Dangerous area

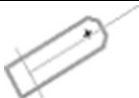
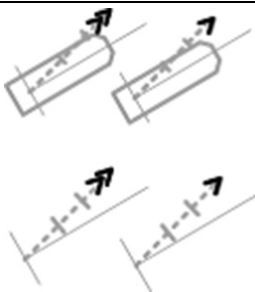
D.6.4 Text

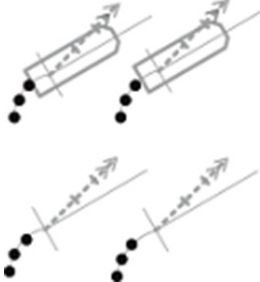
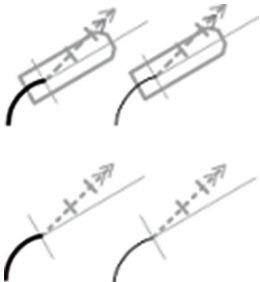
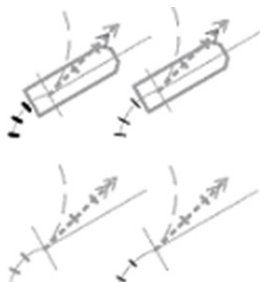
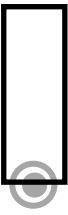
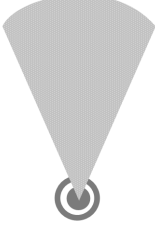
Category name	Object name	Icon button display example	Alert generated when the own ship approaches the object
(General)	Text		No alert

D.7 List of Navigation-related Symbols

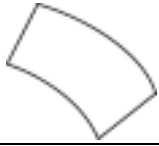
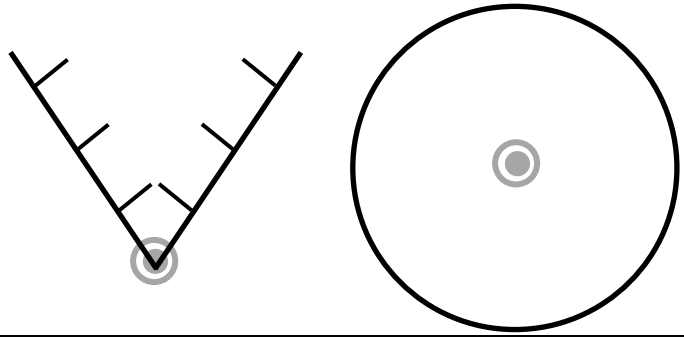
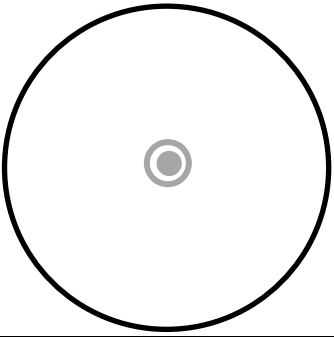
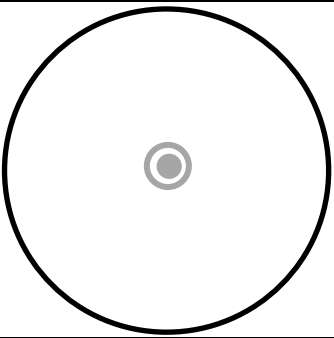
The navigation-related symbols that are displayed in this equipment are listed below.

D.7.1 Related to own ship symbols

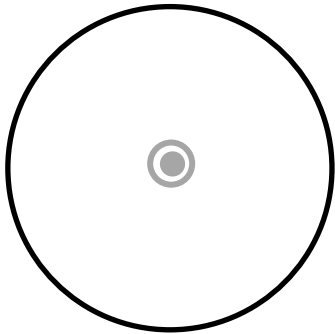
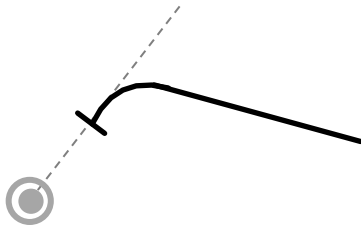
No.	Drawn object name	Drawn object display example
1	Own ship symbol (True Scaled Outline)	
2	Own ship symbol (Simplified Symbol)	
3	Radar antenna position	
4	Heading Line	
5	Beam Line	
6	Stern Line	
7	Vector	
8	Ground vector indicator	
9	Water vector indicator	
10	Own ship track Time Mark	

No.	Drawn object name	Drawn object display example
11	POS2 Symbol	
12	PastPOSN	
13	Own ship track	
14	Vector Time Mark	
15	Vector Area (Anti-grounding monitoring)	
16	Sector Area (Anti-grounding monitoring)	

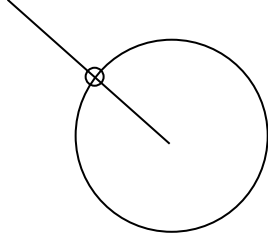
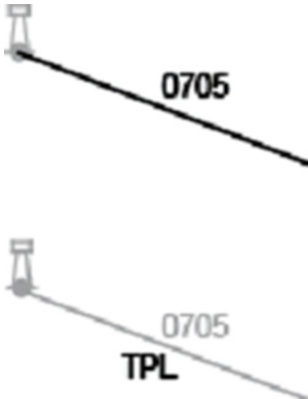
D.7.2 TT/AIS related

No.	Drawn object name	Drawn object display example
1	AZ	
2	AIS Filter	
3	CPA Ring *Thin red circle	
4	Limit Ring *Thin green circle	
5	Sector Blank	

D.7.3 Navigation monitoring related

No.	Drawn object name	Drawn object display example
1	Dredging anchor monitoring circle *Thick red circle	
2	WPT	
	Routes	
3	EBL Maneuver	

D.7.4 Tool related

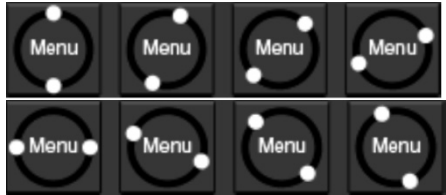
No.	Drawn object name	Drawn object display example
1	Range Ring	
2	EBL	
3	VRM	
4	Node Fixed EBL/VRM *Thin orange line and circle	
5	PI	
6	MOB	
7	LOP	

No.	Drawn object name	Drawn object display example
8	Plotted Position	1115  GNSS 1115  GNSS EP 1115  GNSS DR

D.8 List of Icons/Icon Buttons

The icons/icon buttons displayed in this equipment are listed below.

No.	Name	Functional outline	Displayed image
1	Active indicator	Indicates that the computer is processing by an animation.	
2	Delete	Deletes the item.	
3	Check again	Checks the contents being displayed again.	
4	Setting mark	Displayed when the operation is valid. (E.g., Latitude and longitude offset of chart)	
5	Drive	Displayed at the left of the name when a drive is selected.	
6	Folder	Displayed at the left of the name when a folder is selected.	
7	Home	Changes from the currently displayed screen to the home screen.	
8	Close	Closes the dialog box.	
9	Date selection	Displays the calendar picker.	
10	Dialog box display	Opens another dialog box. (E.g., Route selection dialog)	
11	Day/Night	Displays the state of the current Day/Night setting by an icon.	
12	Display and Panel Brightness	Adjusts the brightness of the display unit and the operation panel.	
13	Change task	Displays the task changing thumbnails such as RADAR, ECDIS, CONNING/AMS, etc.	
14	MOB	Starts the MOB (Man Over Board) mode. In the MOB mode, a symbol display of the position of the sailor falling over board and a dotted line connecting it to the own ship are displayed graphically.	

No.	Name	Functional outline	Displayed image
15	Message notification	When there is a message from outside (AIS safety related messages, etc.), the number of messages is displayed in a badge over the icon. The message window is displayed when the icon is clicked.	
16	Menu	"Menu" button with freeze indicator function. Displays the menu. Indicates using animation that the system is operating.	
17	Writing tool	Changes to the writing mode, which includes user map creation [a)], manual updating [b)] and route creation [c)]. Label of icon changes according to drawing mode.	 a) b) c)
18	Cursor mode selection	Changes the cursor mode to AUTO mode.	
19	Undo	Executes an undo operation.	
20	Screen capture	Creates the capture image at the time this is pressed.	
21	Eraser tool	Changes to the user map deleting mode, and user maps can be deleted successively.	
22	Silencing	Silences the alert sound.	
23	Multiple knob (small knob)	Displays the functions assigned to the multiple knob. Displayed as an icon with the function name at left.	
24	Brightness	Sets the brightness of the screen.	
25	Cursor information display	Displays the cursor read out information area. When pressed again, the cursor read out information area is closed.	
26	Page selection	The "Page Selection" dialog box is displayed.	
27	Add page	(Only in the case of ECDIS) Displays the "Page Selection" dialog box.	

No.	Name	Functional outline	Displayed image
28	Expand List	Displays the TT/AIS list of the standard mode newly in an expanded window.	
29	Standard List	Closes the expand mode TT/AIS list (separate window), and displays in the standard mode (information monitoring window pane)	
30	Standard AIS	Changes to standard AIS display.	
31	Expand AIS	Changes to expanded AIS display.	
32	Route Planning	Opens the dialog box for preparing the route. Route preparation is done by editing the table and graphic editing using the cursor.	
33	Route Monitoring	Opens the dialog box for route monitoring. When a route is selected, displays the information up to the next target location, and monitors whether the own ship is traveling according to the route.	
34	Anchor Watch	Monitors the anchor dredging. When the anchor has been lowered, monitors if the ship is being swept away	
35	Auto Sail	Starts auto sail. Before starting, a safety check of the route is made, and the result is displayed.	
36	Chart	Opens the Chart related menu.	
37	User Map	Opens the user map related menu. It is possible to write marks or lines in the user map.	
38	Logbook	Opens the dialog box of the Logbook. The ship's position, speed, direction, wind direction, wind speed, etc., are recorded at specific intervals of times, or records events that have occurred in the equipment.	
39	TT/AIS	Opens the TT/AIS related menu. This also has the function of highlighting the display of the TT/AIS symbol depending on the conditions, or the function of sending a message to an AIS ship, etc.	

No.	Name	Functional outline	Displayed image
40	Tools	Tool related menu, such as the range and bearing measurement EBL/VRM or PI, etc.	
41	View	Opens the View related menu. Settings are made of the display of objects in the radar PPI or in the chart.	
42	Alert	Opens the alert related menu. Settings related to the alerts from the equipment can be made. When clicked, the alert dialog box appears. Alert settings can be made in the dialog box.	
43	Settings	Opens the menu related to the operation settings of the equipment.	
44	Chart Maintenance	Opens the chart management related menu. Chart management including importing and updating of charts can be made.	
45	Maintenance	The maintenance related menu for the users is displayed. It is possible to check the software version and to monitor the status of the equipment.	
46	Help	Opens the help screen.	
47	Code Input	Input the password.	
48	Service	The menu related to adjustment, servicing, and maintenance is displayed for the servicing personnel.	
49	Import/Update Licence file	Imports or updates the chart Licence.	
50	Import/Update charts	Imports or updates the chart data.	
51	Check Status	Checks an imported chart.	
52	C-Map	Moves to the Licence tab of the C-Map Chart Manager screen.	

No.	Name	Functional outline	Displayed image
53	Back space	Carries out a backspace operation.	
54	Backward movement of the input position	Moves back the input position.	
55	Forward movement of the input position	Moves the input position forward	
56	Operation guide	Displays the operation guide when clicked.	
57	Search	Displayed in the search text box.	
58	Thumbnail / list display selection	Switches between thumbnail and list displays.	 
59	Original scale	Changes the scale of the screen to the original scale of the chart being displayed at the center of the screen.	
60	Home position	Displays the chart position in which the forward direction of the own ship can be seen wide.	
61	Event	Places the event mark at the position of the own ship.	
62	Zoom Area	Makes and enlarged display of the specified square area.	
63	Offset display	Displays the offset amounts of the chart being displayed.	
64	Chart selection	Displays the chart selection dialog box for RNC.	
65	Radar Overlay	Selects ON/OFF of the Radar Overlay display.	
66	AIS display	Selects ON/OFF of the AIS display.	
67	TT	Selects ON/OFF of the TT display.	
68	Move backward	Changes the chart display to the position and scale before the display was changed.	
69	WPT center	Displays the surroundings of the WPT being selected.	

No.	Name	Functional outline	Displayed image
70	Between WPT-WPT	Displays between the "currently selected WPT" and the "immediately previous WPT".	
71	Overall route	Displays the entire route.	
72	Single	Changes the screen display to single screen.	
73	Left-right division	Changes the screen display to left-right divided screen.	
74	Top-bottom division	Changes the screen display to top-bottom divided screen.	
75	Window	Changes the screen display to picture in picture display.	
76	Surroundings not displayed	Hides the display of the tool buttons on the ECDIS screen.	
77	Discard tab	The tab is discarded (discarding the edited route).	
78	All	Consolidated mode of PI This is the mode of operating the orientation and spacing of all the parallel lines.	
79	Individual	Individual mode of PI The orientation of each line, the distance from the reference position, and the length are operated independently in this mode.	
80	Track	PI tracking mode This is the mode of operating the orientation and spacing between two parallel lines. The two parallel lines are placed to the left and right taking CCRP as the reference.	
81	Equiangular	Equal angle mode of PI This is the mode of operating the angle of two lines that intersect at the reference position.	
82	Contents selection	The display contents of the pane are changed directly	

D.9 Data Format of the File that can be Imported/Exported in the ECDIS

D.9.1 File Types

- Route file
- User map file
- Logbook file

D.9.2 File Name

	File name in device	Default exported file name
Route file	*.csv, *.*, *.rtm, *.rta, *.rtn	The file name that is specified by the user in “File name” of the “Export” dialog is used. The default “File Type” is *.rtm and as other types, *.rta, *.rtn, and *.csv are available.
User map file	*.csv, *.uchm	—
Log book file - Specified period	-	Logbook_(Specified start date _end date).csv Example: Logbook_020312_020313.csvl

D.9.3 CSV File Data Structure

- At import, lines starting with “//” are processed as comments.
- Commas are used as delimiters.

Example:

```
// SYMBOL,InstName,,,,,  
// Comment  
// Lat,,Lon,,  
SYMBOL,BOYSHPO1,,  
User Comment  
30,6.433,N,129,35.583,E
```

D.9.4 Route File

Line	Content	Description	Import ^{*1}	Export ^{*2}
1 ^{*3}	// (space)	Fixed string		√
	ROUTE SHEET exported by JRC ECDIS.	Fixed string		√
2	// (space)	Fixed string		√
	<<NOTE>>This strings // indicate comment column/cells. You can edit freely.	Variable-length string		√
3	// (space)	Fixed string		√
	Route name	Route name of the source file		√
	,	Fixed character		√
	<Normal>	Fixed string		√
	,	Fixed character		√
	Route comment	Comment in the source file		√
4	// (space)	Fixed string		√
	WPT No.	Fixed string		√
	,	Fixed character		√
	LAT	Fixed string		√
	,	Fixed character		√
	,	Fixed character		√
	,	Fixed character		√
	LON	Fixed string		√
	,	Fixed character		√
	,	Fixed character		√
	,	Fixed character		√
	PORT[NM]	Fixed character		√
	,	Fixed character		√
	STBD[NM]	Fixed character		√
	,	Fixed character		√
	Arr.Rad[NM]	Fixed character		√
	,	Fixed character		√
	Speed[kn]	Fixed string		√
	,	Fixed character		√
	Sail(RL/GC)	Fixed string		√
	,	Fixed character		√
	ROT[deg/min]	Fixed string		√
	,	Fixed character		√

*1 Information retrieved at import (the same hereinafter)

*2 Information to be exported (the same hereinafter)

*3 Lines with a gray background are deemed as comments (the same hereinafter).

Line	Content	Description	Import *1	Export *2
4	Turn Rad[NM]	Fixed string		√
	,	Fixed character		√
	Time Zone	Fixed string		√
	,	Fixed character		√
	,	Fixed character		√
	Name	Fixed string		√
5	WPT No.	000	√	√
	,	Fixed character	√	√
	Latitude (degrees)	35	√	√
	,	Fixed character	√	√
	Latitude (degrees.minutes)	35.123	√	√
	,	Fixed character	√	√
	Latitude Sign (N/S)	N	√	√
	,	Fixed character	√	√
	Longitude (degrees)	139	√	√
	,	Fixed character	√	√
	Longitude (degrees.minutes)	48.234	√	√
	,	Fixed character	√	√
	Longitude Sign (E/W)	E	√	√
	,	Fixed character	√	√
	Port Cross-Track Limit	0.50	√	√
	,	Fixed character	√	√
	Starboard Cross-Track Limit	0.50	√	√
	,	Fixed character	√	√
	Arrival Circle Radius	0.50	√	√
	,	Fixed character	√	√
	Planned Ship Speed	12.3	√	√
	,	Fixed character	√	√
	Navigation (RL/GC)	RL	√	√
	,	Fixed character	√	√

5	Turn rate	10.00	√	√
	,	Fixed character	√	√
	Turn radius	0.50	√	√
	,	Fixed character	√	√
	Time Zone	09:00	√	√
	,	Fixed character	√	√
	Time Zone Sign (E/W)	E	√	√
	,	Fixed character	√	√
	Name	Yokohama	√	√
6	Hereinafter, repeat Line 5 per WPT		√	√

- On Line WPT000, fields other than the latitude and longitude (degrees, degrees.minutes, sign) are populated with "***".

D.9.5 User Map File

(1) Header record

Line	Content	Description	Import
1	// (space)	Fixed string	
	USER CHART SHEET exported by JRC ECDIS.	Fixed string	
2	// (space)	Fixed string	
	<<NOTE>>This strings // indicate comment column/cells. You can edit freely.	Variable-length string	
3	// (space)	Fixed string	
	User Chart Name	Name of the source file	
	,	Fixed character	
	,	Fixed character	
	User Chart Comment	Comment in the source file	

(2) Object records

a) Symbol

Line	Content	Description	Import
m	// (space)	Fixed string	
	SYMBOL	Fixed string	
	,	Fixed character	
	InstName	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
+3	SYMBOL	Fixed string	√
	,	Fixed character	√
	Instruction name ●=~CIRCLE0 ▲=~TRIANG0 ■=~SQUARE0 ◆=~DIAMND0 ×=~XSHAPE0	~CIRCLE0	√
	,	Fixed character	√
	***	Fixed string	√
	,	Fixed character	√
	***	Fixed string	√
+4	Comment	Comment	√
+5	Latitude (degrees)	35	√
	,	Fixed character	√
	Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Longitude (degrees)	139	√
	,	Fixed character	√
	Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Longitude Sign (E/W)	E	√

b) Danger symbol

Line	Content	Description	Import
m	// (space)	Fixed string	
	DANGER_SYMBOL	Fixed string	
	,	Fixed character	
	InstName	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
+3	DANGER_SYMBOL	Fixed string	√
	,	Fixed character	√
	~WARNSY0	Fixed string	√
	,	Fixed character	√
	***	Fixed string	√
	,	Fixed character	√
	***	Fixed string	√
+4	Comment	Comment	√
+5	Latitude (degrees)	35	√
	,	Fixed character	√
	Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Longitude (degrees)	139	√
	,	Fixed character	√
	Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Longitude Sign (E/W)	E	√

c) (Poly-)Line

Line	Content	Description	Import
m	// (space)	Fixed string	
	LINE_AGGREGATE	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Type	Fixed string	
	,	Fixed character	
	Width	Fixed string	
	,	Fixed character	
	Color No.	Fixed string	
	,	Fixed character	
	Comment	Fixed string	
+3	// (space)	Fixed string	
	Add "END" to the end of vertex.	Fixed string	
+4	LINE_AGGREGATE	Fixed string	√
+5	Comment	Comment	√
+6	Vertex Latitude (degrees)	35	√
	,	Fixed character	√
	Vertex Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Vertex Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Vertex Longitude (degrees)	139	√
	,	Fixed character	√
	Vertex Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Vertex Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Line Type (Solid=,Dash=2,Dotted=3)	1	√
	,	Fixed character	√
	Line Width (1(Thin) - 5(Thick))	1	√
	,	Fixed character	√

Line	Content	Description	Import
+6	Color (White/Black=0,Gray=,Amber=2, Magenta=3,Blue=4,Cyan=5,Green=6, Yellow=7,Orange=8, Red=9)	8	√
	,	Fixed character	√
	Comment	Comment	√
+n	Repeat Line +6 for the number of vertexes.		√
	END	Fixed string (position end)	√

d) Circle (line)

Line	Content	Description	Import
m	// (space)	Fixed string	
	LINE_CIRCLE	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Base Point-Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Radius[nm]	Fixed string	
+3	LINE_CIRCLE	Fixed string	√
+4	Comment	Comment	√
+5	Reference Position Latitude (degrees)	35	√
	,	Fixed character	√
	Reference Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Reference Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Reference Position Longitude (degrees)	139	√
	,	Fixed character	√
	Reference Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Reference Position Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Radius [NM]	2.0	√

e) Ellipse (line)

Line	Content	Description	Import
m	// (space)	Fixed string	
	LINE_ELLIPSE	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Base Point-Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Horizontal Radius [nm]	Fixed string	
	,	Fixed character	
	Vertical Radius [nm]	Fixed string	
+3	LINE_ELLIPSE	Fixed string	√
+4	Comment	Comment	√
+5	Reference Position Latitude (degrees)	35	√
	,	Fixed character	√
	Reference Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Reference Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Reference Position Longitude (degrees)	139	√
	,	Fixed character	√
	Reference Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Reference Position Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Horizontal Radius [NM]	2.0	√
	,	Fixed character	√
	Vertical Radius [NM]	1.5	√

f) Arc

Line	Content	Description	Import
m	// (space)	Fixed string	
	ARC	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Base Point-Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Radius [nm]	Fixed string	
	,	Fixed character	
	Start Angle[deg]	Fixed string	
	,	Fixed character	
	End Angle[deg]	Fixed string	
+3	ARC	Fixed string	√
+4	Comment	Comment	√
+5	Reference Position Latitude (degrees)	35	√
	,	Fixed character	√
	Reference Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Reference Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Reference Position Longitude (degrees)	139	√
	,	Fixed character	√
	Reference Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Reference Position Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Radius [NM]	2.0	√
	,	Fixed character	√
	Start Radius [deg]	120.0	√
	,	Fixed character	√
	End Radius [deg]	180.0	√

g) User danger line

Line	Content	Description	Import
m	// (space)	Fixed string	
	DANGER_LINE_AGGREGATE	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Type	Fixed string	
	,	Fixed character	
	Width	Fixed string	
	,	Fixed character	
	ColorNo	Fixed string	
	,	Fixed character	
	Comment	Fixed string	
+3	// (space)	Fixed string	
	Add "END" to the end of vertex.	Fixed string	
+4	DANGER_LINE_AGGREGATE	Fixed string	√
+5	Comment	Comment	√
+6	Vertex Latitude (degrees)	35	√
	,	Fixed character	√
	Vertex Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Vertex Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Vertex Longitude (degrees)	139	√
	,	Fixed character	√
	Vertex Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Vertex Longitude Sign (E/W)	E	√
	,	Fixed character	√
	0	Fixed character	√
	,	Fixed character	√
	0	Fixed character	√
	,	Fixed character	√
	0	Fixed character	√

Line	Content	Description	Import
+6	,	Fixed character	√
	Comment	Comment	√
+n	Repeat Line +6 for the number of vertexes.		√
	END	Fixed string (position end)	√

h) Arrow

Line	Content	Description	Import
m	// (space)	Fixed string	
	ARROW	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	LineType	Fixed string	
	,	Fixed character	
	LineWidth	Fixed character	
	,	Fixed character	
	LineColorNo	Fixed string	
	,	Fixed character	
	EdgeType	Fixed character	
	,	Fixed character	
	EdgeSize	Fixed string	
+3	// (space)	Fixed string	
	Start Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
+4	// (space)	Fixed string	
	End Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
+5	ARROW	Fixed string	√
+6	Comment	Comment	√
+7	,	Fixed character	√
	Line Width (1(Thin) - 5(Thick))	1	√
	,	Fixed character	√
	Color (White/Black=0,Gray=,Amber=2, Magenta=3,Blue=4,Cyan=5,Green=6, Yellow=7,Orange=8, Red=9)	8	√
	,	Fixed character	√
	Arrow Type -> =0 <- =1 <-> =2	0	√
	,	Fixed character	√
	Arrow Size (0(Small) - 2(Large))	0	√

Line	Content	Description	Import
+8	Start Position Latitude (degrees)	35	√
	,	Fixed character	√
	Start Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Start Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Start Position Longitude (degrees)	139	√
	,	Fixed character	√
	Start Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Start Position Longitude Sign (E/W)	E	√
+9	End Position Latitude (degrees)	38	√
	,	Fixed character	√
	End Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	End Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	End Position Longitude (degrees)	142	√
	,	Fixed character	√
	End Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	End Position Longitude Sign (E/W)	E	√

i) Polygon

Line	Content	Description	Import
m	// (space)	Fixed string	
	POLYGON	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	Add "END" to the end of vertex.	Fixed string	
+3	POLYGON	Fixed string	√
+4	Comment	Comment	√
+5	Vertex Latitude (degrees)	35	√
	,	Fixed character	√
	Vertex Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Vertex Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Vertex Longitude (degrees)	139	√
	,	Fixed character	√
	Vertex Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Vertex Longitude Sign (E/W)	E	√
+n	Repeat Line +5 for the number of vertexes.		√
	END	Fixed string (position end)	√

j) Circle (polygon)

Line	Content	Description	Import
m	// (space)	Fixed string	
	CIRCLE	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Base Point-Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Radius[nm]	Fixed string	
+3	CIRCLE	Fixed string	√
+4	Comment	Comment	√
+5	Reference Position Latitude (degrees)	35	√
	,	Fixed character	√
	Reference Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Reference Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Reference Position Longitude (degrees)	139	√
	,	Fixed character	√
	Reference Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Reference Position Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Radius [NM]	2.0	√

k) Ellipse (polygon)

Line	Content	Description	Import
m	// (space)	Fixed string	
	ELLIPSE	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Base Point-Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Horizontal Radius [nm]	Fixed string	
	,	Fixed character	
	Vertical Radius [nm]	Fixed string	
+3	ELLIPSE	Fixed string	√
+4	Comment	Comment	√
+5	Reference Position Latitude (degrees)	35	√
	,	Fixed character	√
	Reference Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Reference Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Reference Position Longitude (degrees)	139	√
	,	Fixed character	√
	Reference Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Reference Position Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Horizontal Radius [NM]	2.0	√
	,	Fixed character	√
	Vertical Radius [NM]	1.5	√

I) Fan

Line	Content	Description	Import
m	// (space)	Fixed string	
	FAN	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Base Point-Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Base Point-Lon	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Radius [nm]	Fixed string	
	,	Fixed character	
	Start Angle[deg]	Fixed string	
	,	Fixed character	
	End Angle[deg]	Fixed string	
+3	FAN	Fixed string	√
+4	Comment	Comment	√
+5	Reference Position Latitude (degrees)	35	√
	,	Fixed character	√
	Reference Position Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Reference Position Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Reference Position Longitude (degrees)	139	√
	,	Fixed character	√
	Reference Position Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Reference Position Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Radius [NM]	2.0	√
	,	Fixed character	√
	Start Radius [deg]	120.0	√
	,	Fixed character	√
	End Radius [deg]	180.0	√

m) User danger area

Line	Content	Description	Import
m	// (space)	Fixed string	
	DANGER_AREA	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
	,	Fixed character	
	Add "END" to the end of vertex.	Fixed string	
+3	DANGER_AREA	Fixed string	√
+4	Comment	Comment	√
+5	Vertex Latitude (degrees)	35	√
	,	Fixed character	√
	Vertex Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Vertex Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Vertex Longitude (degrees)	139	√
	,	Fixed character	√
	Vertex Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Vertex Longitude Sign (E/W)	E	√
+n	Repeat Line +5 for the number of vertexes.		√
	END	Fixed string (position end)	√

n) Text

Line	Content	Description	Import
m	// (space)	Fixed string	
	TEXT	Fixed string	
+1	// (space)	Fixed string	
	Comment	Fixed string	
+2	// (space)	Fixed string	
	Lat	Fixed string	
	,	Fixed character	
	,	Fixed character	
	,	Fixed character	
	Lon	Fixed string	
	,	Fixed character	
	Rotation	Fixed string	
+3	TEXT	Fixed string	√
	,	Fixed character	√
	Text	Caution: High flow velocity	√
+4	Comment	Comment	√
+5	Vertex Latitude (degrees)	35	√
	,	Fixed character	√
	Vertex Latitude (degrees.minutes)	35.123	√
	,	Fixed character	√
	Vertex Latitude Sign (N/S)	N	√
	,	Fixed character	√
	Vertex Longitude (degrees)	139	√
	,	Fixed character	√
	Vertex Longitude (degrees.minutes)	48.234	√
	,	Fixed character	√
	Vertex Longitude Sign (E/W)	E	√
	,	Fixed character	√
	Tuning Angle	0	√
	,	Fixed character	√
	Font Size	22	√

D.9.6 Log Book File

Line	Content	Description	Export
1	//	Fixed string	√
	LOGBOOK SHEET exported by JRC ECDIS.	Fixed string	√
2	//	Fixed string	√
	<<NOTE>>This strings // indicate comment column/cells. You can edit freely.	variable-length string	√
3	//No	Fixed string	√
	,	Fixed character	√
	Date	Fixed string	√
	,	Fixed character	√
	Time	Fixed string	√
	,	Fixed character	√
	,	Fixed character	√
	Time Zone	Fixed string	√
	,	Fixed character	√
	Event	Fixed string	√
	,	Fixed character	√
	Descriptions	Fixed string	√
	,	Fixed character	√
	Latitude	Fixed string	√
	,	Fixed character	√
	,	Fixed character	√
	,	Fixed character	√
	Longitude	Fixed string	√
	,	Fixed character	√
	,	Fixed character	√
	,	Fixed character	√
	POSN1	Fixed string	√
	,	Fixed character	√
	POSN2	Fixed string	√
	,	Fixed character	√
	HDG(deg)	Fixed string	√
	,	Fixed character	√

Line	Content	Description	Export
	STW(kn)	Fixed string	√
	,	Fixed character	√
	COG(deg)	Fixed string	√
	,	Fixed character	√
	SOG(kn)	Fixed string	√
	,	Fixed character	√
	Av.Speed 4h(G)(kn)	Fixed string	√
	,	Fixed character	√
	Av.Speed 24h(G)(kn)	Fixed string	√
	,	Fixed character	√
	Depth(m)	Fixed string	√
	,	Fixed character	√
	Chart	Fixed string	√
	,	Fixed character	√
	Set(deg)	Fixed string	√
	,	Fixed character	√
	Drift(kn)	Fixed string	√
	,	Fixed character	√
	Wind Dir.(deg)	Fixed string	√
	,	Fixed character	√
	Wind Speed(kn)	Fixed string	√
	,	Fixed character	√
	Beaufort Scale	Fixed string	√
	,	Fixed character	√
	Wave Dir.(deg)	Fixed string	√
	.	Fixed character	√
	Wave Height(m)	Fixed string	√
	,	Fixed character	√
	Voyage DIST(G)(NM)	Fixed string	√
	,	Fixed character	√
	Voyage DIST(W)(NM)	Fixed string	√
	.	Fixed character	√

Line	Content	Description	Export
	Air Pressure(hPa)	Fixed string	√
	,	Fixed character	√
	Air Temperature(deg C)	Fixed string	√
	,	Fixed character	√
	Water Temperature(deg C)	Fixed string	√
	,	Fixed character	√
	Weather Condition	Fixed string	√
	,	Fixed character	√
	Engine Rev.(RPM)	Fixed string	√
	,	Fixed character	√
	Comment	Fixed string	√
4	No.	0001	√
	,		√
	Date (LMT)	2014/01/17	√
	,		√
	Time (LMT)	08:45:24	√
	,		√
	Time Zone Sign	+	√
	,		√
	Time Zone	09:00	√
	,		√
	Event Type	Manual Position Fix	√
	,		√
	Event Details		√
	,		√
	Latitude	35	√
	,		√
		35.123	√
	,		√
		N	√
	,		√

Line	Content	Description	Export
4	Longitude	139	√
	,		√
		48.234	√
	,		√
		E	√
	,		√
	Position 1 Source	GPS 1	√
	,		√
	Position 2 Source	GPS 2	√
	,		√
	Ship's Heading	123.4	√
	,		√
	Water Ship Speed	12.3	√
	,		√
	Ground Course	123.5	√
	,		√
	Ground Ship Speed	12.4	√
	,		√
	Average Ship Speed In 4h	12.0	√
	,		√
	Average Ship Speed In 24h	13.2	√
	,		√
	Depth Of Water	123.9	√
	,		√
	Chart Name That Caused The Event	JP34OBJ	√
	,		√
	Flow Direction	123.4	√
	,		√
	Flow Speed	12.4	√
	,		√
	Wind Bearing	234.5	√
	,		√

Line	Content	Description	Export
n	Wind Speed	10.3	√
	,		√
	Beaufort Scale	Hurricane	√
	,		√
	Wave Direction	123.4	√
	.		√
	Wave Height	2.1	√
	,		√
	Ground Running Distance	12345.67	√
	,		√
	Water Running Distance	12300.23	√
	.		√
	Atmospheric Pressure	1003	√
	,		√
	Temperature	23.4	√
	,		√
	Water Temperature	20.3	√
	,		√
	Weather Condition	Blue sky	√
	,		√
	Engine Speed	135.6	√
	,		√
	Comment		√
	Repeat Line 4 the number of times of events.		√

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