iECDiS

Intelligent • i-chart • Innovation

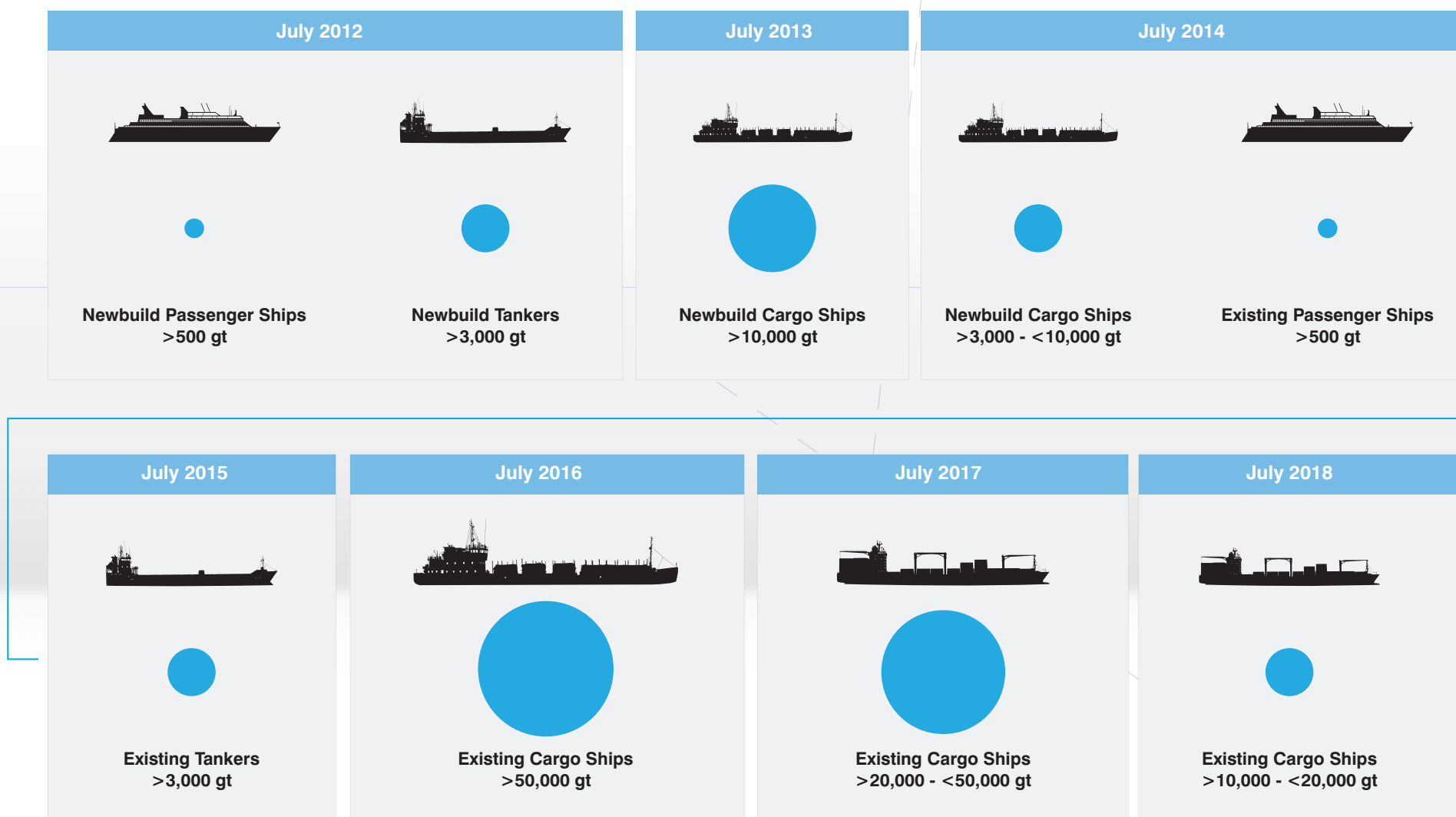## Embrace The ECDIS Revolution & Enjoy The Benefits

martek
MARINE
Innovative Ship Solutions

The clock is ticking for you to equip your ships with ECDIS to meet the mandatory new IMO legislation. It's a headache that's not going away. The implementation schedule is clear and with all the planning that's needed, you've got less time than you may think. You've got a small mountain to climb and by acting now, you'll put yourself in the strongest position for a successful transition before the pressure really builds.

You've got a lot to do: identify your compliance deadline; choose a supplier (there are many)!; train your crew; establish operating procedure; survey your ships; draft a risk assessment; draft an installation plan; install ECDIS; expedite chart supply contracts and delivery logistics. Complicated isn't it?!

ECDIS Implementation Schedule - July 2012 to July 2018

July 2012		July 2013	July 2014	
Newbuild Passenger Ships >500 gt	Newbuild Tankers >3,000 gt	Newbuild Cargo Ships >10,000 gt	Newbuild Cargo Ships >3,000 - <10,000 gt	Existing Passenger Ships >500 gt

July 2015	July 2016	July 2017	July 2018
Existing Tankers >3,000 gt	Existing Cargo Ships >50,000 gt	Existing Cargo Ships >20,000 - <50,000 gt	Existing Cargo Ships >10,000 - <20,000 gt

Waiting until the last minute to implement ECDIS is not an option. For many operators, the biggest obstacle to switching to digital navigation early is cost. You may think of ECDIS as simply as another piece of legislation to comply with and choose to wait until the last minute to part with your valuable cash. But there's actually a compelling financial and safety case to implement soonest and gain an advantage over your competitors:

- Increase your navigational safety - according to DNV research, deploying ECDIS reduces grounding frequency by >30% and grounding is the fourth highest contribution (12%) to marine fatalities.

- Eliminate your direct costs for paper charts and your administration & logistics of getting paper charts to your ships and the time needed to manually update them.

- Optimise & automate your route planning using weather & tidal data, cutting your transit times and saving you fuel.

- Allow your crew a longer transition period to paperless navigation so they acquire competency and confidence long before the deadline, easing pressure.

iECDIS™ offers you a complete solution to paperless navigation to meet all the requirements of the legislation and much much more. We've developed a number of free guides to assist with every step of the way. Read on to find out how iECDIS™ can solve your compliance requirements and deliver major operational benefits over any other ECDIS.

iECDIS™ Software

You'll want a trusted ECDIS software platform that's proven over many years to be stable, free from bugs and backed by continual investment & development from a major organisation to make it future-proof. That's just what you get with iECDIS™. Rest assured it provides all ECDIS functionality as per the IMO performance standards, but there again so do all ECDIS so we won't bore you with all the legislative features. With iECDIS™ though, you get a series of unique software features that give you a real performance advantage:

Powered By Jeppesen*, A Boeing Company – The Heart Of >20,000 Marine ECDIS/ECS Worldwide

Unique Compressed SENC format for fastest updates and low data charges
Once you've installed your ECDIS, the speed and ease of managing chart updates is the major factor in using your system. That's why we offer the iECDIS™ Jeppesen ENC service in a unique format to make updates quicker and cheaper.

One DVD rather than multiple CDs saving hours in installation time
When you need to do a full chart database update, with iECDIS™ you'll complete it in ~10-minutes from 1 DVD – that could be the difference between you sailing and being detained!

Automatic and instant seasonal route planning with all way points auto update of changes from weather data
Plot the safest, shortest route on the iECDIS™ with automatic amendments made by the intelligent iCHART database for weather/tide.

Multiple Licensing options with Unique GSM modem for updates (UK Patent Application GB1301714.0)
With the iECDIS™ take advantage of the multiple chart licensing options available – Flat Fee ENC, Direct, Dynamic & OpenENC PAYS (Pay-As-You-Sail) – and the multiple update methods. If you haven't got appropriate satellite communications on your ships, iECDIS™ is available with an optional integrated GSM modem so that all updates are done automatically via the global GSM network for a low flat monthly fee. With this option, why would you bother with the alternative of managing the complicated logistics of getting monthly DVDs to your ships and having to manually load them on your ECDIS.

| GSM MODEM | E-MAIL | DVD | USB | ONLINE |

Practice with iECDIS™ before mandatory migration to paperless navigation

Practise makes perfect and uniquely with ECDIS, you can allow your crew train before you make the mandatory transition to paperless navigation, without incurring the cost of official ENCs. Operating iECDIS™ purely as an aid to navigation, your crew can familiarise themselves with all aspects of system operation and performance at your convenience long before you make the full transition.
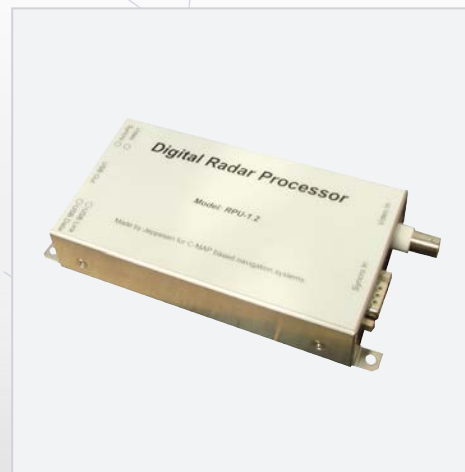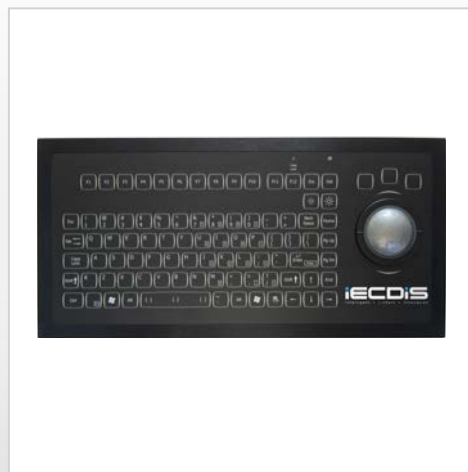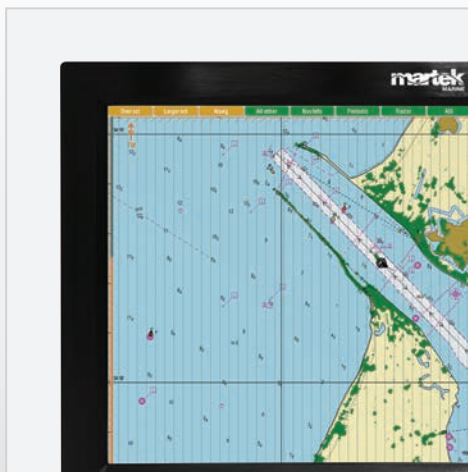
*Jeppesen, a Boeing company, has been creating charts for over 75 years. All commercial aircraft navigate using Jeppesen instruments and charts!

Please see our free guide for further information – **A Guide to Electronic Navigation Charts: Finding The Best Licensing Solution For Your Ships.**

![Martek Marine - Innovative Ship Solutions logo]
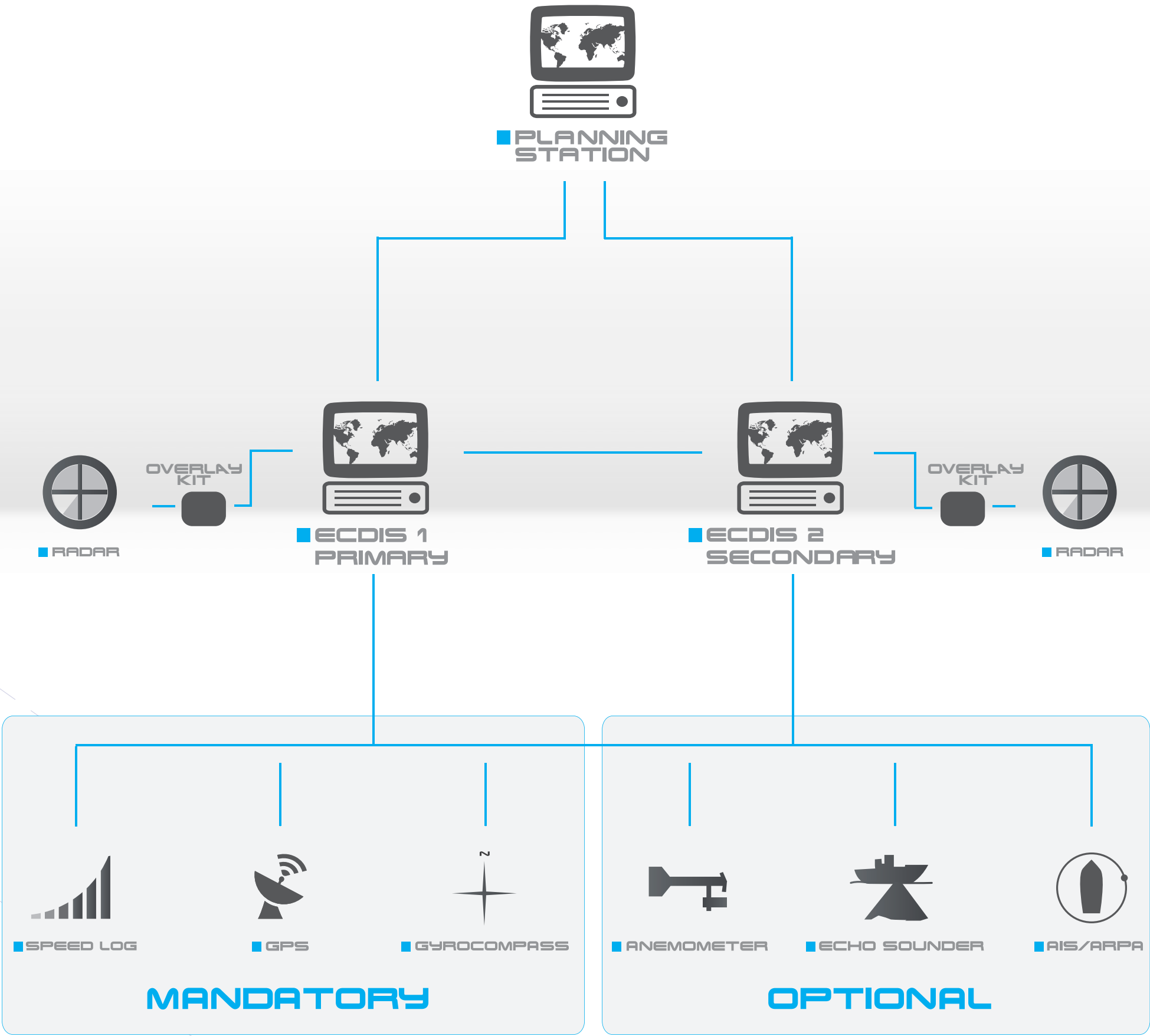
iECDIS™ Hardware

Your ECDIS is going to get lots of use and that's why its standard of design & construction is so important when deciding which system to choose. Beware of glossy pieces of mass produced panel computers resembling consumer electronics – they won't last in the harsh environment of your bridge like iECDIS™ will and you'll face big bills to replace them, if they're not already obsolete when they need replacing.

iECDIS™ is MED approved providing **"Intelligent, iChart, Innovation"** - rest assured it provides all ECDIS functionality as per the IMO performance standards, but there again so do all ECDIS so we won't bore you with all the legislative features. With iECDIS™ though, you get a series of unique features that give you a real performance advantage:
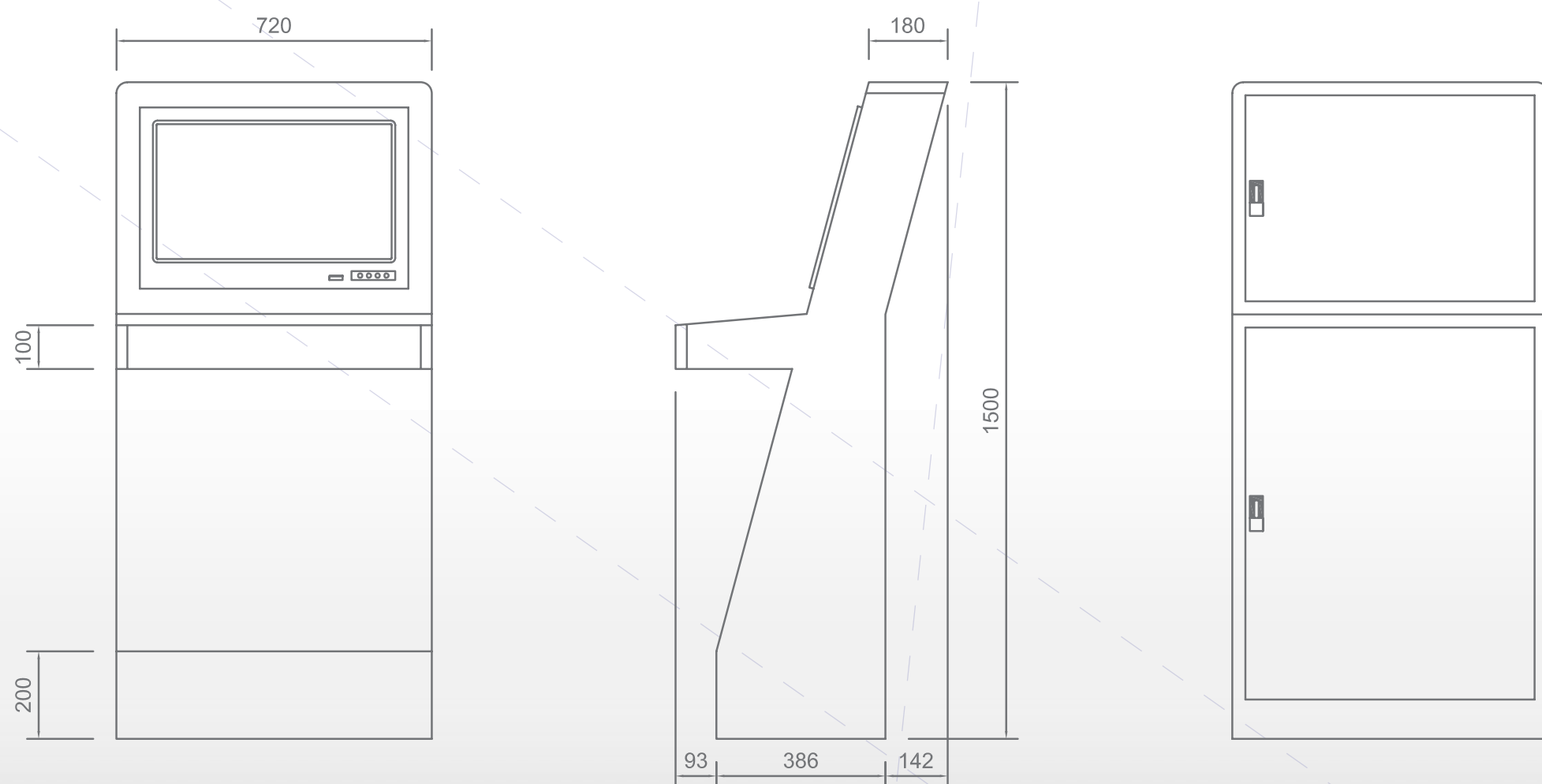
- Heavy Duty Military Spec' Hardware – Built to last, supported for life

- Fanless Operation with no Moving Parts – Maintenance free, extended life

- 32GB Solid State Drive (SSD) - won't wear out like conventional hard disc drives

- Integrated GSM Modem Option – Fully Automatic Chart & Notice To Mariner Updates avoiding VSAT charges

- Multi-Power Operation With Auto Change-over – No Need for Additional UPS

- Anti-glare screen – Eliminating reflection by ~ 99% improving contrast, colour & brightness
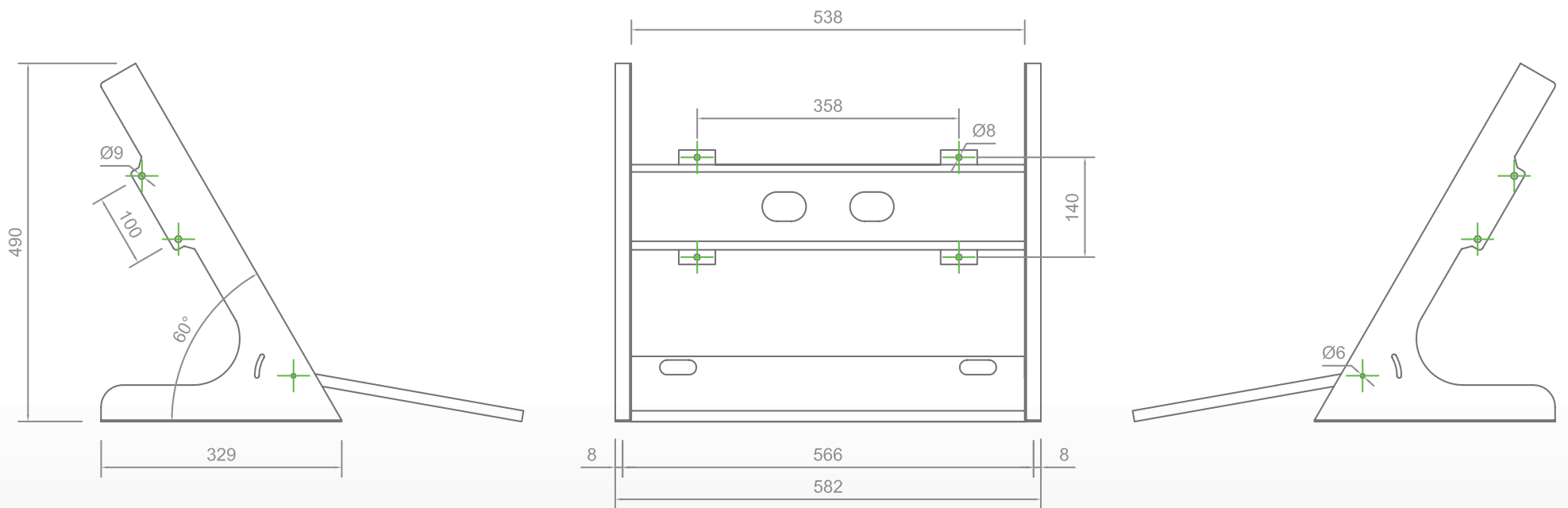
Bridge Integration Diagram

■ PLANNING
STATION

■ RADAR   OVERLAY
KIT   ■ ECDIS 1
PRIMARY   ■ ECDIS 2
SECONDARY   OVERLAY
KIT   ■ RADAR

■ SPEED LOG   ■ GPS   ■ GYROCOMPASS   ■ ANEMOMETER   ■ ECHO SOUNDER   ■ AIS/ARPA

MANDATORY   OPTIONAL

iECDIS™ Deck Standing Console Mount

720

180

1500

100

200

93   386   142

iECDIS™ Desktop Mounting Brackets

iPLAN

Adopting paperless navigation may seem daunting, but don't worry, that's what we're here for. We've designed iPLAN to take away the headache of delivering full compliance quickly and easily. iPLAN is a comprehensive review of your fleet or vessel's ECDIS requirements for just US$ 995 fully refundable if iECDIS™ is purchased. iPLAN gives you:

- Legislative guidelines - Looking at IMO, flag state and your company requirements

- Best licensing option taking into account your geographic operating location and sector

- Complete risk assessment specific to YOUR vessels

- Installation process to ensure smooth transition to digital navigation

- Training requirements of crew

iCHART

Managing electronic chart updates with our unique iCHART service couldn't be easier - in most cases you don't need to lift a finger as it's all completely automatic. With iCHART, you can rest assured that your ships will always be sailing with the correct and up to date charts saving you a fortune in administration costs.

- Multiple licensing options - Flat Fee ENC, Direct, Dynamic & OpenENC PAYS (Pay-As-You-Sail)

- Multiple update options

- Secure update server and automatic billing

JEPPESEN
A BOEING COMPANY

iTRAIN

The logistics of arranging mandatory generic & type specific ECDIS crew training may seem like a headache, and once again, we've got it covered for you with iTRAIN. In partnership with the world's leading ECDIS training company Safebridge & the ECDIS Training Consortium (ETC), iTRAIN delivers all your needs easily and cheaply to get your crew fully certified and competent.

- Training centres in 16 key strategic worldwide maritime crewing hubs

- Multiple training styles to suit your preference - Online, on board, on site or at an approved training centre

- Centralised record keeping, certification and feedback to manage crew training and provide 24/7 online access for PSC vetting inspection

Safebridge

ETC
ECDIS
TRAINING
CONSORTIUM

Whichever ECDIS you chose, you'll want peace of mind that if anything goes wrong at any time on any day, you've got someone to help and that's just what iSERV and iSERV Premium are for:

iSERV:

- Dedicated 24/7 ECDIS customer service line

- Worldwide network of over 60 sales, installation & service partners that continues to grow

- All on board labour

- Free annual software upgrade

iSERV Premium:

- Priority service attendance

- "Hot-swap" of hardware from extensive stocks - guaranteed despatch within 4 working hours of problem diagnosis

- Free hardware upgrade after 3 years

- Competitive rates for annual performance test

We are committed to giving you the best customer service for optimum performance of your iECDIS™ so you will receive the same localised, high quality, consistent service and support no matter where your vessels are trading.

Don't Buy iECDIS™ - rent/lease it.

The benefits of implementing ECDIS early are compelling and we recognise that many operators will not have the cash set aside just yet to buy it. That will be frustrating for you if you're an industry innovator, keen to be pro-active and gain an advantage over your competitors. So that's why we give you the option to rent/lease iECDIS™!

From only **US$ 299 per month** you can get iECDIS™ immediately on your ships and start enjoying all the benefits without major capital outlay. As well as enabling you to implement early, renting/leasing allows you the freedom to continually upgrade as technology advances so you've always got the latest technology on your ships – just look at the advancement of the smartphone over the last few years.

Technical Specification

iECDIS™ Panel

Physical Characteristics	
Dimensions:	613 (W) x 414 (H) x 105.2 (D) mm
Mounting:	Comes complete with back plate for mounting into bridge console or optional desktop mounting brackets or freestanding console mount. See mounting instructions for further details
Weight:	17.4 kg, rugged marine metal construction, corrosion resistant
Cables:	Mounting at bracket to insure grounding and a robust connection of cables
Colour:	Black
Coating:	Front bezel military coating specification, rest of PPC standard

Monitor	
Display:	24" LCD LED TFT active-matrix, aspect ratio 16:9
Resolution (no. of pixels):	1920 x 1080 = 2,073,600 (Full HD resolution)
Max Colours:	16.7 million (RGB 8-bit)
Dimming Range:	0-100%, LED backlight. Controlled by mainboard interface
Response Time:	25 ms (typical), "black" to "white", or better
Contrast Ratio:	1000:1 (typical)
Light Intensity:	300 cd/m2 (typical) or better
Viewable Angle:	+/- 89 deg. (typical) (up/down/left/right), or better
Backlight Life:	50,000 hours at 25o C ambient temperature, or better
Glass:	LCD display protection & chemical strengthen for vandalism glass; anti-reflective
Controls:	Power On/Off

Computer	
Installed OS:	Microsoft® Windows® 7 Embedded
CPU/Processor:	1 No. Intel® Atom D2700 Core® 2 Duo, 2.13GHz, 1MB L2 cache memory
Installed Memory:	1 No. 4GB DDR3 204-pin SO-DIMM memory
Installed Storage:	1 No. 32GB SSD
Video Memory:	Support 1.5GB video share memory at 4G RAM
System Chipset:	Intel® NM10 Cedar Trail
VGA Controller:	Intel® GMA 3600 graphics chip
VGA Memory:	Shared 1.5GB or separate memory space
DVMT Technology:	Support Intel intelligent high speed Dynamic Video Management Technology
Ethernet:	3 No. high speed Giga bit RJ-45 LAN supporting 100/1000 Mbps
Modem:	GSM 3G Modem with integrated SIM card (optional)
Modem Connector Type:	SMA connector
BIOS:	UEFI AMIBIOS
Speaker/Buzzer:	Buzzer / 2 No. 4 watts speakers
Cooling system:	Fan less cooling system

Power	
Power source:	In built DC 18-32V & AC adapter 90-264V, with automatic switch over from AC to DC (with no time delay)
Power Consumption:	Max 70 Watts, typical 40W
Connection:	AC: IEC power plug, three wires (1.5mm^2). DC: Screw type for two wires (5mm^2)
Fuse	Internal fuse
Power switch	Power switch for AC and DC, next to each plug
Safety Approval:	Power adapter is UL, CSA, TUV, etc approval

Environment	
Operating Temp:	-15 deg C to +60 deg C
Storage Temp:	-20 deg C to +80 deg C
IP-Rating:	IP65

Input/Output Connectors	
Ethernet GB LAN :	2-4 Giga bit LAN support 10/100/1000 Mbps RJ45 (located at bottom of panel)
VGA/RGB Port:	VGA port support 2nd independent display (located at bottom of panel)
HDMI Port:	Support high definition video & audio signals (located at bottom of panel)
USB Port:	5 No. USB 2.0 (4 No.at bottom of panel & 1 No. at front of panel, water tight, below the screen next to the menu buttons)
PS2 Port:	1 No. PS2 keyboard & 1 No. PS2 mouse (located at bottom of panel)
Audio In-Out Port:	Audio-in & audio-out ports (located at bottom of panel)
COM (serial)	4 No. opto-isolated RS422 (RX/TX) COM ports as standard (option to upgrade to 8 No. opto-isolated RS422 COM ports)
COM Connector type:	D-sub 9-pin
Digital I/O (option)	Optional 4 digital input and 4 digital output
Mini PCI-e Slot:	2 No. mini PCI-express slot (1 for GSM 3G modem)
CF Slot:	1 No. compact flash shot for future expansion
SATA Slot:	2 No. SATA slot for SSD

Premium Keyboard

Marine approved compact keyboard with low power LED backlit keys guaranteeing long lifespan with no external power supply required. Available as either an enclosed type or panel mounted.
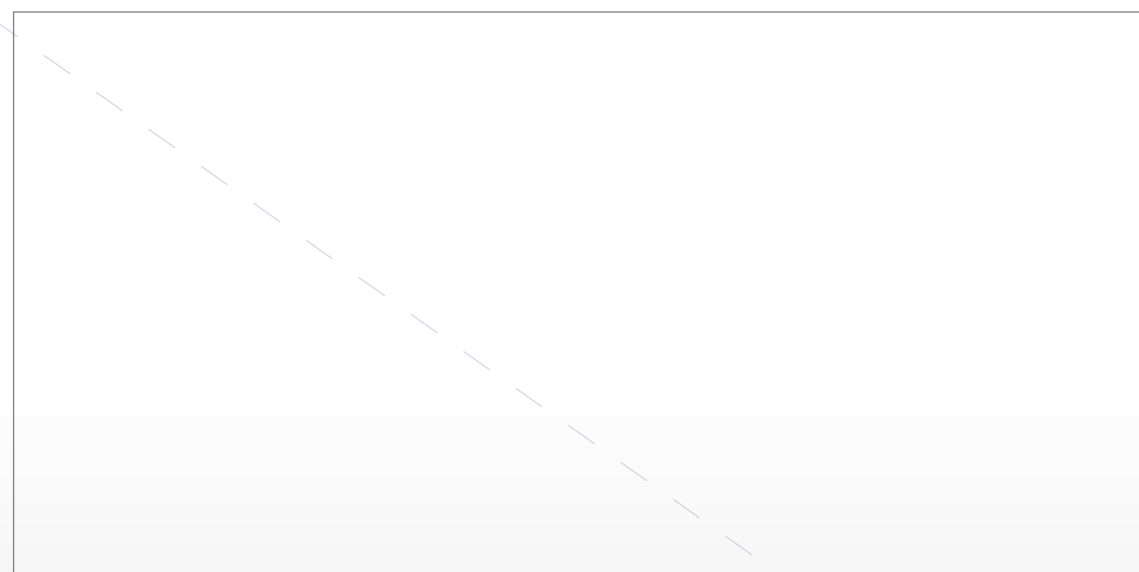
Technical Specification	
Weight	Enclosed: 3.5kg Panel mount: 1.2kg
Dimensions	Enclosed: 418 x 246 x 70mm; Panel mount: 385 x 185 x 50mm
Layout	US English
Connection Type	USB
Housing Colour	Black (as standard)
Key Colour	Black (as standard)
Number of keys	92
Cable Length	1.6m braided shielded USB cable (no cable provided with the panel mount keyboard)
Operating Temperature	-15oC to +60oC
Approvals	IEC 60945 compliant (marine approved)
Track Ball	50mm laser trackball, epoxy resin
Keyboard	IP65 sealed; Short travel switches with 0.3mm travel and 2.55 N operating force
Compass safe distance	Enclosed: 1.4m; Panel mount: 0.5m

Radar Overlay Box - Type Approved

Radar overlay box designed to link radar with ECDIS to enable the radar display to be overlaid onto the chart graphics on the iECDIS™.

Technical Specification	
Weight	300g
Dimensions	16.3 x 9.0 x 4.2cm
Power	From USB
Radar source data	Digitisation and processing
Samples/radial	4096
Radials/image	4096 (360 degrees)
Display	Real-time radar data
Interface	USB 2.0 that connects to a Type-A connector (using high quality USB cable)
Control configuration	Slave
Computer operating system	Windows XP or Windows Vista or Windows 7

iECDiS
Intelligent ■ i-chart ■ Innovation

From US$ 299 per month.

martek
MARINE
Innovative Ship Solutions