



United Kingdom  
Hydrographic Office

SWPHC19-07J UK National Report

# UNITED KINGDOM NATIONAL REPORT

to the

SOUTH-WEST PACIFIC  
HYDROGRAPHIC COMMISSION (SWPHC)  
19TH MEETING

23 - 25 FEBRUARY 2022  
(Virtual Meeting)

This report supplements the UK Generic National Report, posted on the UKHO website

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## **1. UK HYDROGRAPHIC OFFICE (UKHO)**

### **UK Delivery of Hydrographic Services**

**1.1** The UK delivery of hydrographic services is described in the UK Generic National Report; it is worth highlighting, however, the close liaison which exists between UK's Hydrographic Office (UKHO) and UK's maritime administration Maritime & Coastguard Agency in providing a coordinated approach to hydrographic and maritime safety representation both nationally and internationally.



### **UKHO Governance and Targets**

**1.2** This is described in the [UK Generic National Report](#) to the IHO.

### **UKHO Organisation**

**1.3** Details of the UKHO's organisation are provided in the UK Generic National Report (Section 1) together with general contact details. Specific contact details relevant to the SWPHC region are included at the end of this Report.

### **Production Systems**

**1.4** This is described in the UK Generic National Report.

### **Cooperation and Partnerships**

**1.5** The UK is committed to bilateral arrangements, developed in co-operation with other international government hydrographic authorities and data providers, covering a range of topics, including the use/re-use of data protected by copyright and intellectual property rights of those authorities. These also promote other forms of co-operation between the participants, helping to enhance international maritime safety and protection of the environment.

## **2. REGIONAL ACTIVITY**

### **UK Overseas Territories Programme**

**2.1** The UKHO continues to run the Overseas Territories Seabed Mapping Programme (OTSMP), which is reviewing the status of hydrography within the UK Overseas Territories (OTs), and continues to highlight the importance and utility, both locally and within UK government, of Hydrography and the wider blue economy within the context of the UK OTs. Despite current restrictions as a result of COVID-19, the UKHO is continuing to plan and deliver Programme activity in several UK OTs through to 2022, as well as working with OTs to ensure their compliance with the Hydrographic elements of SOLAS.

**2.2** The UK fulfils the Primary charting responsibilities of the following UK OT within the SWPHC region:

- Pitcairn Islands (Pitcairn, Henderson, Ducie and Oeno Islands)

**2.3** The OTSMP has UK government funding to assess and redress the deficit of bathymetric data and lack of sound hydrographic governance in the UK's OTs. The programme is now in its sixth year and in November 2021 saw the mobilisation of an airborne lidar survey in the Cayman Islands which will capture bathymetry data in the Cayman's coastal waters down to approximately 40m water depth.

### **Commonwealth Marine Economies Programme**

**2.4** The UKHO is also continuing to support the Commonwealth Marine Economies (CME) Programme. The CME Programme is providing 17 Commonwealth Small Island Developing States (SIDS) with accurate hydrographic and scientific data relating to their marine environment, as well as capacity building for national bodies. Of these 17 countries, 9 are within the SWPHC region, including:

- Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

**2.5** The UK Government's CME Programme aims to support the sustainable economic growth of SIDS

by maximizing the potential of their marine resources, helping to improve their resilience to climate change and natural disasters, protect their environment and food security, and ultimately improve the livelihood of local communities.

## Surveys and Capacity Building

**2.6** Details of the management of civil hydrographic surveys in UK Home Waters are provided in the UK Generic National Report, and on the UKHO website. UK's National Hydrographic Committee (known as the Civil Hydrography Annual Seminar (CHAS) meets on an annual basis and provides the necessary breadth of interests to ensure that all surveying requirements are considered when prioritising the work of the Civil Hydrography Programme (CHP).

**2.7** In total, UKHO survey operations under the OTSMP and CME programme have covered a combined area of nearly 20,000KM<sup>2</sup> around the world in 2021, 24% of which was conducted in the SWPHC region.

**2.8** Both programmes have continued to deliver capacity building and in the last year have remotely delivered online training to Antigua & Barbuda, Guyana, Jamaica and Montserrat. We have also conducted an in-person technical visit to Antigua and Barbuda and are currently developing an Action and Implementation Plan to assist with its Hydrographic Development. Further capacity building activity is planned for Guyana in 2022.

**2.9** The UK continues to explore how we can strengthen the relationship with countries for which we are the PCA. We have increased our level of engagement to better understand prioritised requirements in the SWPHC region and are currently updating our strategy to reflect this.

**2.10** Any requests for survey assistance from nations within the SWPHC region will be considered. The UKHO has a dedicated team of specialists that manage the portfolio of survey and hydrographic development programmes. In addition to survey advice, the team are configured to provide support and advice in the development of hydrographic governance and identifying funding. Further information can be obtained from ([hydrographicprogrammes@UKHO.gov.uk](mailto:hydrographicprogrammes@UKHO.gov.uk)).

## 3. CHARTS

**3.1** UK's Generic National Report provides information on UK's portfolio of chart products and services. The following paragraphs provide information specifically relevant to the SWPHC region.

### Paper Charts

**3.2** Information on UK's chart portfolio is provided on the ADMIRALTY website. The following charts have been published since the last SWPHC meeting as New Charts or full New Editions:

- 36 New Editions of charts previously adopted from the Australian (AUS) series
- Two New Editions of charts previously adopted from the New Zealand (NZ) series

In addition, the table below lists the 11 charts that have been published, in addition to those mentioned above.

GB Chart Number	Title	Published
4655 (INT 655)	International Chart Series – South Pacific Ocean, Mururia to Ducie Island	25 <sup>th</sup> Feb 2021
PNG397	New Britain – New Ireland – Bougainville Island, Cape Kwoi to Buka Island	4 <sup>th</sup> March 2021
PNG398	Papua New Guinea – New Ireland, Tulun Islands to Tanga Islands	4 <sup>th</sup> March 2021
4657 (INT 657)	International Chart Series – South Pacific Ocean, Southern Cook Islands to Îles de la Société and Îles Australes	25 <sup>th</sup> March 2021
4656 (INT 656)	International Chart Series – South Pacific Ocean, Îles Tuamotu to Îles Australes	15 <sup>th</sup> April 2021
4653 (INT 653)	International Chart Series – South Pacific Ocean, Malden Island to Îles de la Société	15 <sup>th</sup> April 2021

GB Chart Number	Title	Published
1436	South Pacific Ocean – Polynésie Française, Plans in Tahiti and Moorea	3 <sup>rd</sup> June 2021
4636 (INT 636)	International Chart Series – South Pacific Ocean, Récifs Bampton to Île Hunter	22 <sup>nd</sup> July 2021
935	South Pacific Ocean – Nouvelle – Calédonie (North-Western Part)	25 <sup>th</sup> November 2021
936	South Pacific Ocean – Nouvelle – Calédonie (South-Eastern Part)	25 <sup>th</sup> November 2021
4637 (INT 637)	International Chart Series – South Pacific Ocean, Vanuatu to Norfolk Island	25 <sup>th</sup> November 2021

Charts scheduled for publication in the next 6 months.

GB Chart Number	Title	Planned
4655 (INT 655)	International Chart Series – South Pacific Ocean, Mururia to Ducie Island	March 2022

## Digital Charts

**3.3** As noted in Section 3.1, UK's Generic National Report provides information on UK's portfolio of chart products and services. The following paragraphs provide information specifically relevant to the SWPHC region.



## ENCs

**3.4** Within the SWPHC region, the UKHO has released a total of 96 ENC cells. The breakdown by usage band is shown in the table below:

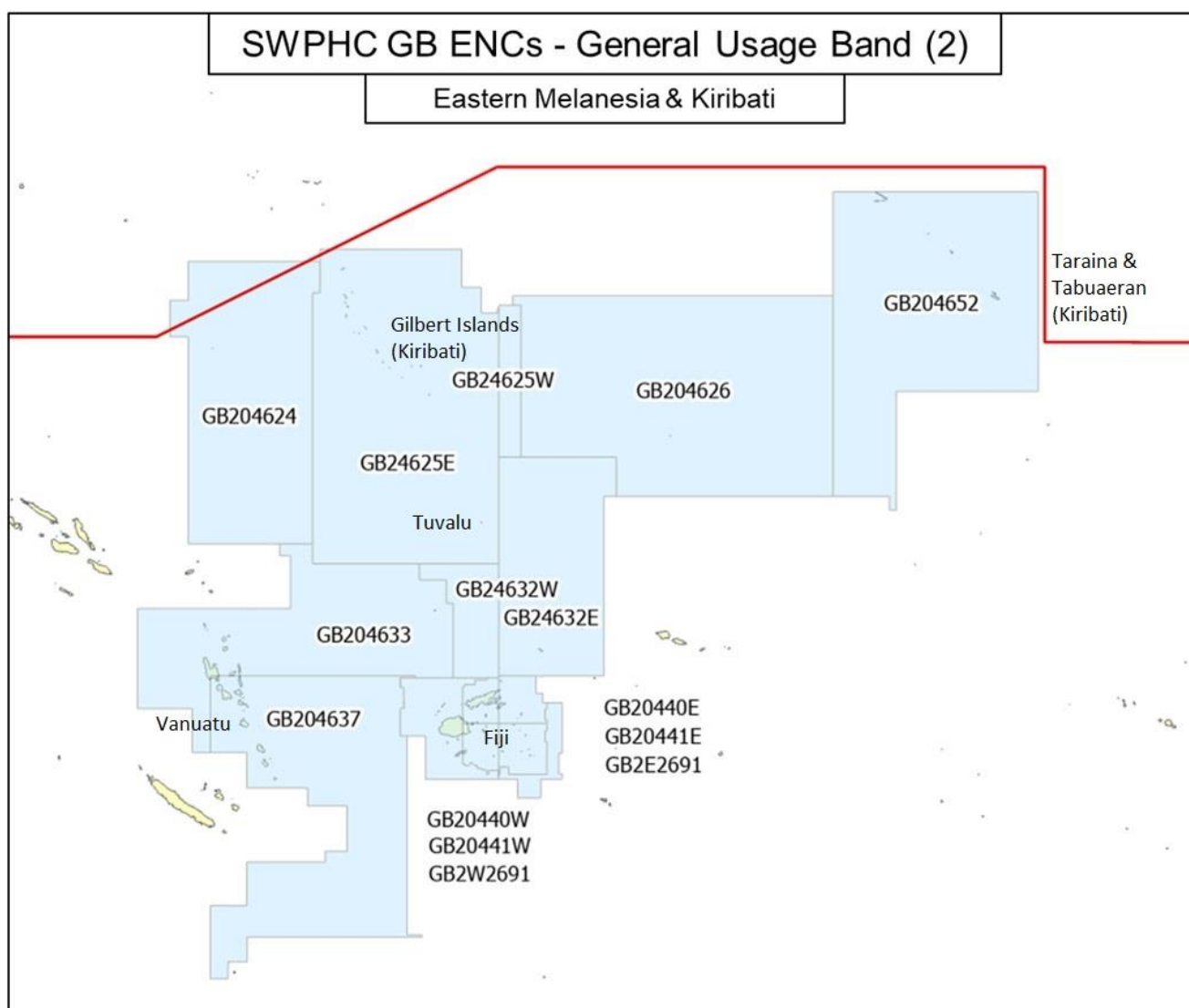
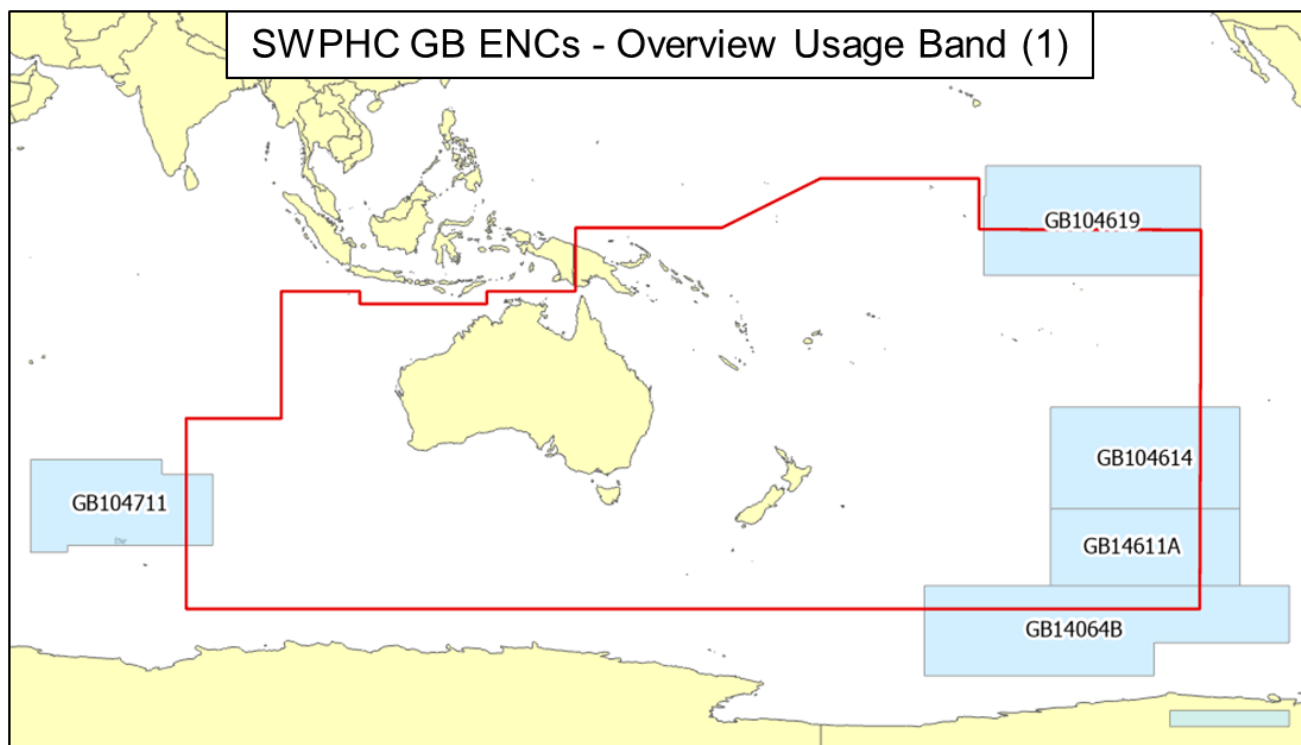
**ENC totals by usage band as produced by UKHO**

SWPHC Region Released Cells	
ENC Usage Band	Number of GB ENC's
Usage Band 1	5
Usage Band 2	15
Usage Band 3	19
Usage Band 4	31
Usage Band 5	24
Usage Band 6	2
Total Number of ENCs	96

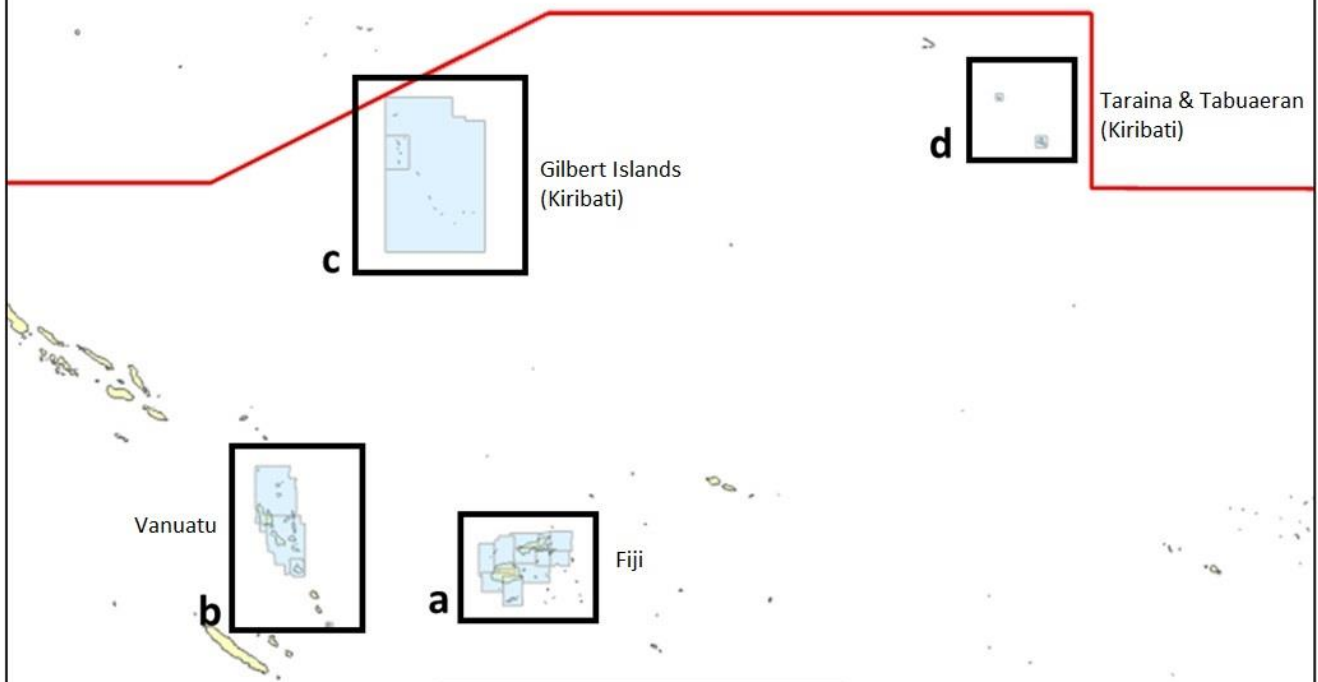
The tables below show revisions to GB ENC coverage for the SWPHC Region during 2021/22. The subsequent diagrams illustrate the current coverage of GB ENCs within the SWPHC Region.

New Cells Feb 2021 - Jan 2022	Week No.
GB600991	51_21
GB6H0002	44_21

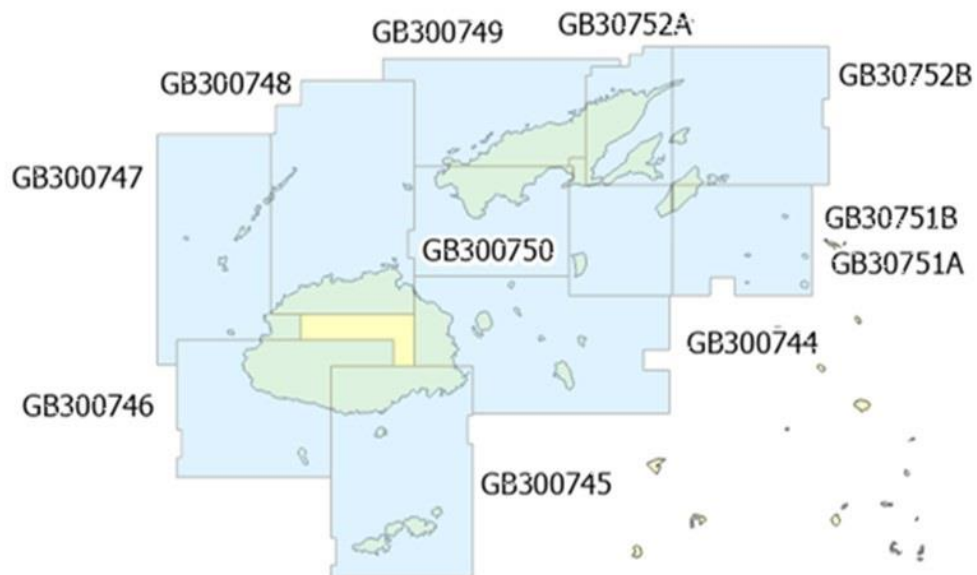
GB600991 is the first of 5 new ENCs based on new satellite derived bathymetry and positioned using satellite imagery. GB6H0002 is a new berthing scale plan produced following feedback by P&O SWPHC17. The ENC contains 1m contour intervals to 30m to support the berthing of large cruise vessels at Ardimanni and Main Wharf in Pontoon Bay.



## SWPHC GB ENC's – Coastal Usage Band (3)

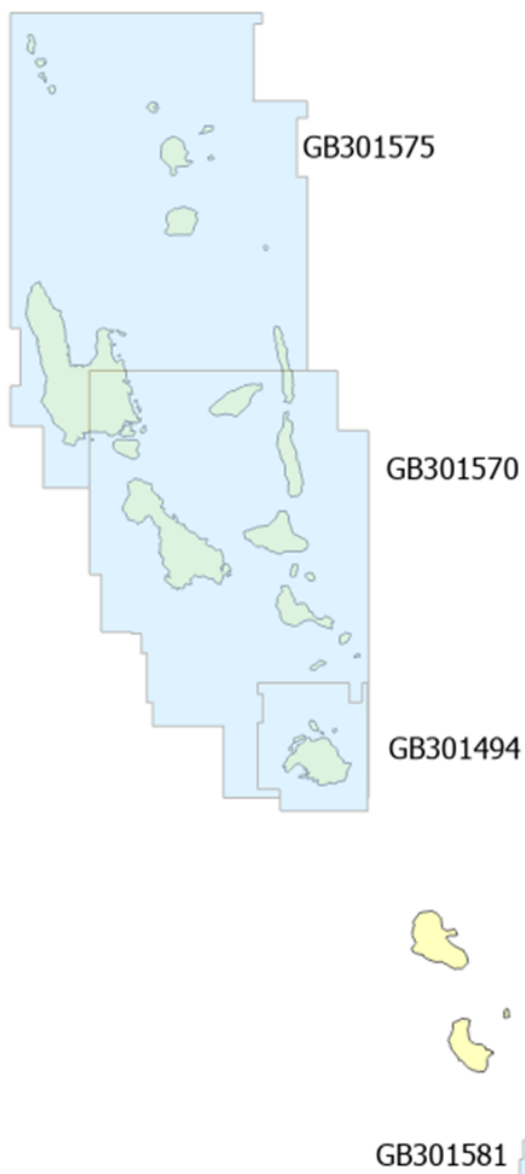


### a - Fiji

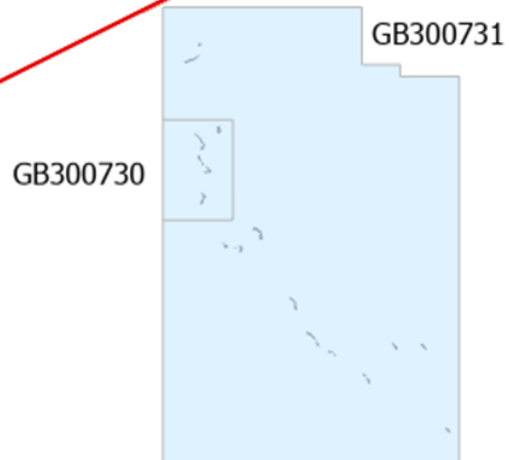


# SWPHC GB ENC's – Coastal Usage Band (3) Cont.

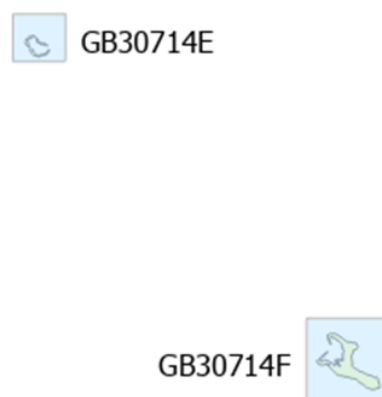
## b - Vanuatu



## c – Gilbert Islands (Kiribati)

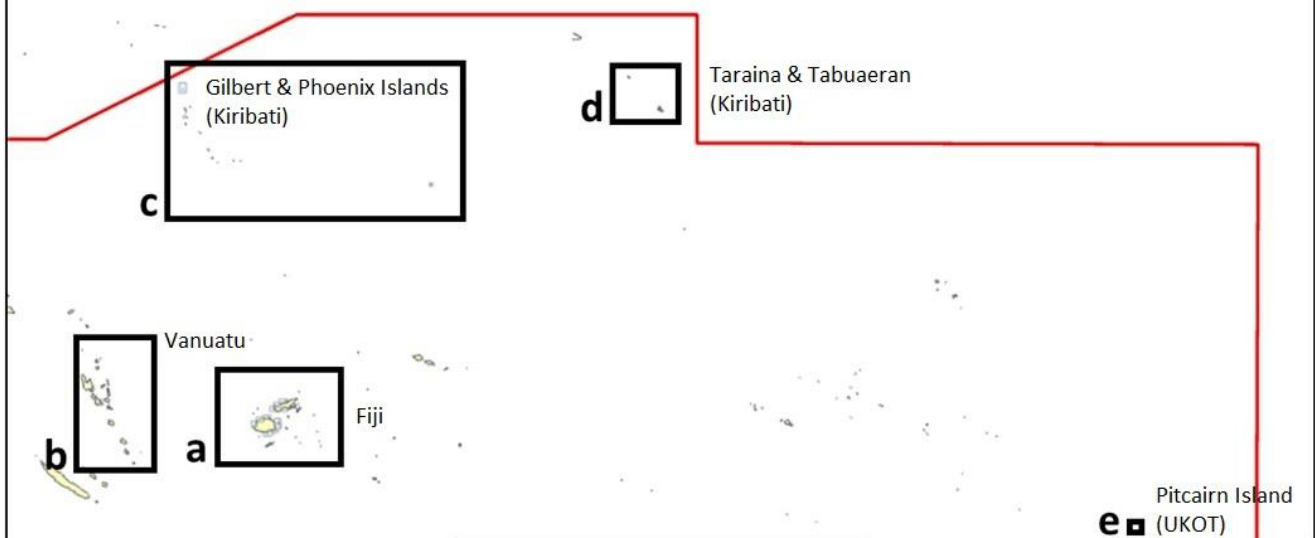


## d – Taraina & Tabuaeran (Kiribati)

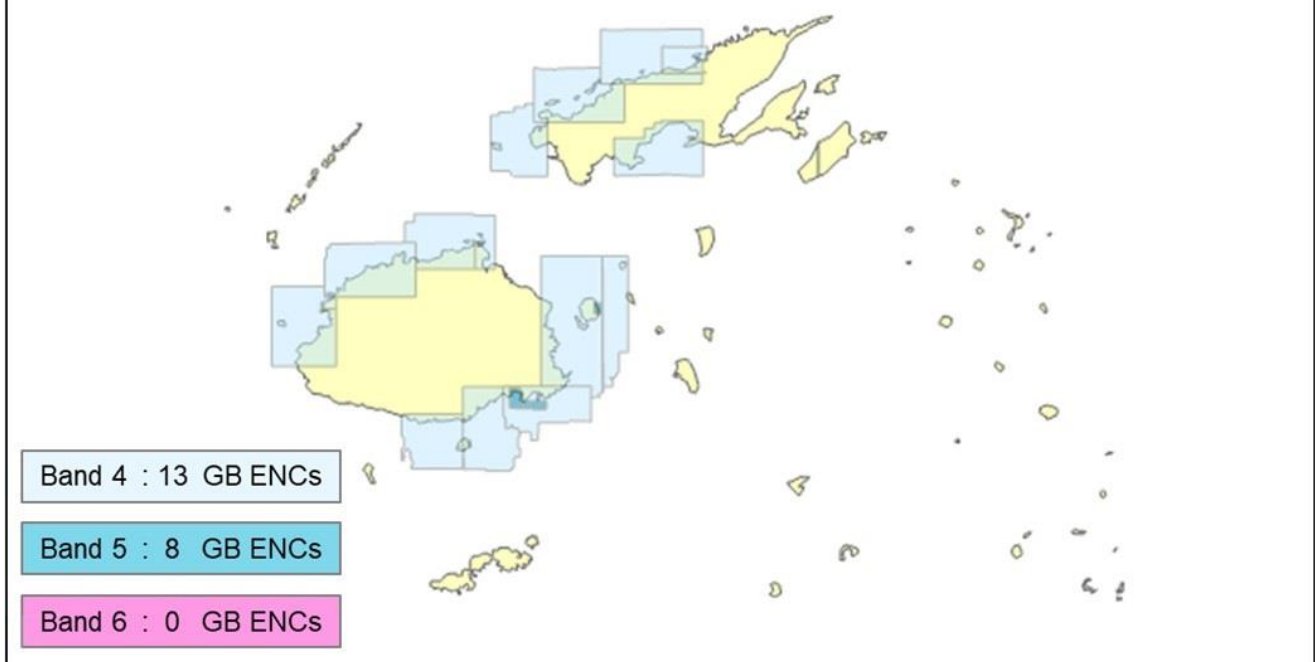




# SWPHC GB ENC's - Approach, Harbour, & Berthing Usage Bands (4,5,6)



## a - Fiji



# SWPHC GB ENC's - Approach, Harbour, & Berthing Usage Bands (4,5,6)

## c – Gilbert & Phoenix Islands (Kiribati)

Band 4 : 2 GB ENC's

Band 5 : 1 GB ENC's

Band 6 : 0 GB ENC's

## b - Vanuatu

Band 4 : 16 GB ENC's

Band 5 : 13 GB ENC's

Band 6 : 1 GB ENC's

## d – Taraina & Tabuaeran (Kiribati)

Band 4 : 0 GB ENC's

Band 5 : 2 GB ENC's

Band 6 : 0 GB ENC's

## e – Pitcairn Island (UKOT)

Band 4 : 0 GB ENC's

Band 5 : 0 GB ENC's

Band 6 : 1 GB ENC's

## ENC Distribution

**3.5** The UKHO, along with other European hydrographic offices, was a founder member of the International Centre for ENC (IC-ENC) Regional ENC Coordination Centre (RENC). IC-ENC concentrates its efforts on the validation and consistency of ENC data and leaves the marketing of ENCs to the shipping industry to its value-added resellers (VAR) and chart agents. Additional details can be found on the IC-ENC website ([www.ic-enc.org](http://www.ic-enc.org)).

The UKHO also acts as a VAR in its own right, particularly promoting a global range of ENCs under the AVCS brand alongside its successful ADMIRALTY range of paper charts and publications. Additional details can be found on the ADMIRALTY website ([www.admiralty.co.uk](http://www.admiralty.co.uk)).

## S-100

**3.6** The UKHO is at the forefront of developing S-100 based products and services; we are doing this by working in collaboration and actively engaging with other Hydrographic Offices and our industry partners. We are sharing out knowledge and experiences with others as we go on this journey. With regard to S-100 based products and services, the UKHO is focusing on the detailed development of S-101 (Electronic Navigational Chart (ENC)), S-102 (Bathymetric Surface), S-104 (Water Level Information for Surface Navigation) and S-111 (Surface Currents). It anticipates roll-out of initial commercial services from 2024 onwards.

## Gridding

**3.7** The UKHO has chosen the parameters of a gridded scheme for S-57 and S-101 which can be applied to all GB ENCs across the globe at all scale bands. The grid was chosen following testing and trialling, comparing the grid size options which best align with the existing GB coverage. The work to apply the grid will also include Data Improvement themes including harmonising and consistency of scale and features. This is part of the UKHO's response to the findings in a recent joint UK Marine Accident Investigation Branch and Danish Marine Accident Investigation Department report.

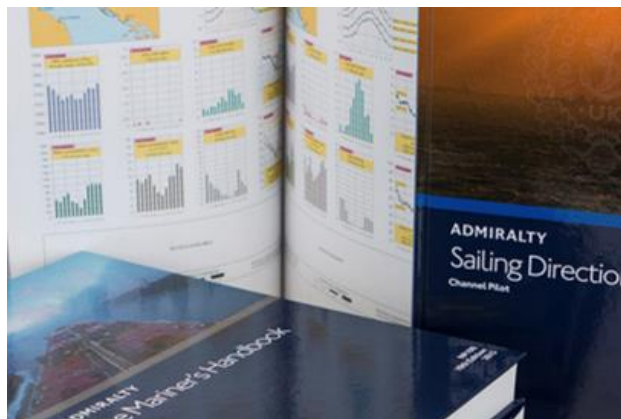
## 4. PUBLICATIONS

### Paper Publications

**4.1** The Admiralty Paper Publications in the SWPHC region are as follows:

#### ADMIRALTY Sailing Directions:

- NP 13 Australia Pilot Vol 2
- NP 14 Australia Pilot Vol 2
- NP 15 Australia Pilot Vol 3
- NP 34 Indonesia Pilot 2
- NP 39 South Indian Ocean Pilot
- NP44 Malacca Strait and W Coast of Sumatra Pilot
- NP51 New Zealand Pilot
- NP60 Pacific Islands Pilot Vol 1



NP6 I Pacific Islands Pilot Vol 2  
NP62 Pacific Islands Pilot Vol 3

### **ADMIRALTY Tide Tables:**

NP204 Tide Table 4 – South Pacific Ocean

### **ADMIRALTY Lists of Lights:**

NP 83 Lights List K – Western Pacific Oceans, S of the Equator  
NP 88 Lights List Q – Eastern Pacific Oceans, S of the Equator

### **ADMIRALTY Lists of Radio Signals**

NP 281 (2) (Vol I Part 2) Maritime Radio Stations – Americas, Far East, Oceania  
NP 282.2 (Vol 2 Part 2) Radio Position Fixing Systems  
NP283 (2) (Vol 3 Part 2) Maritime Safety Information Services – America , Far East, Oceania  
NP 286 (4) (Vol 6 Part 4) Pilot Services, VTS & Port Ops – Indian Sub-Continent, SE Asia & Australia

### **New Editions published since last SWPHC FEB 2021:**

#### **ADMIRALTY Sailing Directions:**

NP 51 New Zealand Pilot – Published 02/09/2021  
NP 34 Indonesia Pilot 2 – Published 27/01/2022  
NP 15 Australia Pilot Vol 3 17/02/22

### **New Editions to be published:**

#### **ADMIRALTY Sailing Directions:**

NP44 Malacca Strait and W Coast of Sumatra Pilot TBC – Summer 2021  
NP61 Pacific Islands Pilot Vol 2 TBC – Winter 2022

Admiralty Sailing Directions are all maintained on a continuous revision cycle and new editions are published every 3-5 years or as required.

ADMIRALTY Tide Tables, ADMIRALTY Lists of Lights and ADMIRALTY Lists of Radio Signals and are published annually.

Full details of the ADMIRALTY publication range and their status can be found on the ADMIRALTY website (<https://www.admiralty.co.uk/>).

### **Digital Publications**

**4.2** The UKHO offers digital equivalents to its existing paper publications to support the IMO mandate of ECDIS. These publications provide mariners with additional functionality and automate the task of updating.

**4.3** The UKHO produces a range of ADMIRALTY Digital Publications which are digital versions of ADMIRALTY paper Nautical Publications. These publications are subscription-based and updatable by Notice to Mariners.

- **ADMIRALTY e-Nautical Publications (AENP):** e-Book versions of ADMIRALTY Sailing Directions and reference publications.

- **ADMIRALTY Digital List of Lights (ADLL):** Digital versions of ADMIRALTY lights publications.

- **ADMIRALTY TotalTide (ATT):** Digital versions of ADMIRALTY tidal publications.



- **ADMIRALTY Digital Radio Signals (ADRS):** Digital versions of ADMIRALTY radio signal publications.

**4.4** The **ADMIRALTY Digital Catalogue** (ADC) can be downloaded free from the ADMIRALTY website ([www.admiralty.co.uk](http://www.admiralty.co.uk)). It includes details of all paper and digital charts and publications and is updated weekly. It is a useful tool to check chart coverage within the region, and to show the latest edition dates of both charts and publications.

## 5. MARITIME SAFETY INFORMATION

**5.1 Responsibilities.** The UK's principal responsibility within the SWPHC region is for its UK Overseas Territories, namely the Pitcairn Islands (Pitcairn, Henderson, Ducie and Oeno Islands), and those Commonwealth of Nations countries where the UK is the primary charting authority (PCA), including:

- Fiji
- Kiribati
- Nauru
- Tuvalu
- Vanuatu

**5.2** The UK maintains close liaison with the NAVAREA Co-ordinators for NAVAREAs X (Australia) and XIV (New Zealand), which cover the SWPHC area. Any information received at UKHO which requires urgent promulgation is passed to the respective NAVAREA Co-ordinator on a 24-hour basis.

**5.3 GMDSS.** With the exception of Australia and New Zealand, GMDSS coverage in the SWPHC region is generally sparse and administrations should be encouraged to develop their capabilities and infrastructure and to provide at least Phase One hydrographic capability to promulgate navigational warnings in a timely and efficient manner in their coastal regions, or to utilise the communications facilities of the NAVAREA X and XIV Co-ordinators.

**5.4** The UK contributes at international forums that consider MSI matters, including IHO World-Wide Navigational Warning Service Sub-Committee and numerous IMO Committees and Sub Committees. UK currently provides the Chair and Secretary of the IMO International NAVTEX Co-ordinating Panel.

**5.5 Notices to Mariners.** The current Admiralty weekly Notices to Mariners are now supplemented by daily updates; these are available on the UKHO website.

## 6. C-55 LATEST UPDATE

**6.1** As described in the UK Generic National Report, UKHO is committed to providing regular updates to the C-55 entries for UK Home Waters and its Overseas Territories. The latest status is correctly depicted within C-55.

**6.2** The UK provides assistance to update C-55 entries to other countries, including Fiji, Kiribati, Nauru, Tuvalu, and Vanuatu, where UKHO provides primary charting, recognising that local input remains critical to the maintenance of C-55 as an up-to-date and authoritative reference document.

**6.3** Table of navigationally significant areas (e.g., Charted traffic separation schemes, anchorages and channels) within your area of jurisdiction (Pitcairn Dependencies) and PCAs Fiji, Kiribati, Nauru, Tuvalu, and Vanuatu. Please reference geographical locations as per largest scale chart. This information will be used to derive an estimate % figure for the Region. Examples are provided in the table below.

Ref. IHO Strategic Plan, Goal 1, Target 1.2, SPI 1.2.2.

Navigationally significant area	Location	Chart
Southwest Channel	Maskelyne Islands, Vanuatu	1577
Malo Passage	Malo, Espiritu Santo, Vanuatu	1638
Recommended Inshore Track	Viti Levu, Fiji	387, 389 & 750

Recommended Inshore Track (Sau Sau Passage, Mali Pass, Monkey Face Passage & Yadua Passage)	Vanua Levu, Fiji	749 & 750
Daveta Yawa-Levu	Makogai, Fiji	468
Natubari (South Entrance)	Levuka, Fiji	1244
Levu Passage	Suva	1660
Navula Passage	Viti Levu, Fiji	1670
Approach to Betio	Kiribati	729
Recommended tracks	Funafuti Atol, Tuvalu	2983

## 7. CAPACITY BUILDING

**7.1** The UK fully supports the IHO Capacity Building Sub-Committee (CBSC) strategy, particularly its emphasis on getting Phase 1 and appropriate Phase 2 capacity in place to enable coastal states to meet their obligations under SOLAS Chapter V Regulations 4 and 9. The UK will continue to contribute resources to both CBSC initiatives and to providing bilateral assistance.

**7.2** The UKHO has a post dedicated to International Training and Capacity Building. Its key aims are to ensure that capacity building is properly considered in the UKHO activity and that the UKHO's capacity building activities are fully coordinated. It acts as the initial point of contact for the UKHO involvement in IHO capacity building activities, including UK involvement in regional hydrographic commission initiatives and IHO CBSC activities.

### Training provided by the UKHO- International Training Academy (ITA)

**7.3** The International Training Academy drives forward the continuous skills and knowledge development of our global network through world-class training. Details of all UKHO awarded training opportunities currently offered by the ITA are provided on the UKHO website or by contacting [internationaltraining@ukho.gov.uk](mailto:internationaltraining@ukho.gov.uk).

The UKHO recognises the importance of continued training and, to enable continued activity, has developed a new Learner Management System (LMS). The LMS acts as the learning portal for training, offering all delegates ease of access to online seminars and interactive learning material. As a result of this the UKHO are currently running a series of virtual courses which started with an introductory series in March 2021. The first phase of this blended learning has seen 1,960 delegates places being assigned during a five-month period, studying across three topics:

- Compiling for Navigational Safety
- Introduction to S-57
- Understanding ENCs

As a result of customer and stakeholder feedback the following courses are under development and will be offered across the network in the future:

- Introduction to/unpacking of S-100
- Chart Awareness

Further details are described in the UK Generic National Report.

The UKHO International Training Academy are pleased to announce that the Category B Nippon funded Course in Geospatial Marine Analysis and Cartography (GEOMAC) will recommence in February 2022. The course will welcome one delegate from the SWPHC region – Vanuatu joining the programme.

### Royal Navy Training in Hydrography, Meteorology and Oceanography

**7.4** Nationally and internationally certified courses delivered by the Royal Navy's Maritime Warfare school are described in the UK Generic National Report.





## 8. OCEANOGRAPHIC ACTIVITIES

**8.1** UKHO's Marine Environment and Situational Awareness team, maintains databases of oceanographic information collected by the Royal Navy, or obtained during exchange with other nations. Data exchange is an important source of data and so UKHO are always keen to discuss new exchanges. Through participation in the Argo project and in the UN's International Oceanographic Data Exchange (IODE), UKHO work with the international oceanographic community. On behalf of the Royal Navy, UKHO makes periodic releases of data to international data centres including US NODC, for inclusion in the World Ocean Database, the IHO Data Centre for Digital Bathymetry, and British Oceanographic Data Centre (BODC).

**8.2** The UK national repository for oceanographic data collected for scientific purposes, including data from UK-sponsored research cruises anywhere in the world, is British Oceanographic Data Centre (BODC) (<https://www.bodc.ac.uk/>); it is funded by the Natural Environment Research Council (NERC), and located in Liverpool. The main centre for scientific oceanography is the National Oceanography Centre (NOC) in Southampton (<https://www.noc.soton.ac.uk/>).

**8.3 Seabed 2030.** The UKHO is currently developing its plan for contributing to both the Ocean Decade and Seabed 2030. In doing so we are looking at ways in which we can support these initiatives through sharing our technical knowledge and expertise in data collection and processing, and carefully considering how we can further facilitate access to our existing data holdings.

We have recently entered a technical cooperation agreement with Teledyne Caris and Seabed 2030 which will allow the Seabed 2030 Regional and Global Centres to use the ADMIRALTY GAM service. The ADMIRALTY GAM Service was developed by the UKHO and is a tool that cleans noise in single track bathymetry survey data. This tool will help to improve the speed and human effort associated with processing of bathymetry data. The Admiralty GAM service was recently released at Ocean Business 2021 and is now also available commercially.

**8.4** Global sea levels are monitored as part of the GLOSS project, by the Permanent Service for Mean Sea Level (PSMSL). This operation is based at the National Oceanographic Centre in Liverpool.

**8.5** The UKHO participates on the IHO Tides, Water Levels and Surface Currents Working Group (TWCWG). Part of the WG activities involve Member States activities and experiences with long-term [permanent] 'National' Tide Gauge Networks.

**8.6** The UKHO is not directly tasked with owning and operating these at the UK national level - this is the remit of the National Tidal and Sea Level Facility (NTSLF, [www.ntsrf.org](http://www.ntsrf.org)) operated by the UK Environment Agency and very recently (summer 2021) contract work to maintain and upgrade the National Tide gauge Network (NTGN) has been awarded to the commercial company OceanWise (<https://www.oceanwise.eu/>).

**8.7** However, under the auspices of the OTSMP, the UKHO has been working with external contractors to establish permanently installed tide gauges in Overseas Territories including to date Bermuda, Caymans and the Turks and Caicos Islands. As well as being an essential part of the OTSMP work, they form an integral and important contribution to global sea level monitoring networks. These now feed into the NOAA GOES (Geostationary Operation Environmental Satellites) Collection System, and will hopefully also be linked into the IOC Sealevel Monitoring System. Such permanent installations are instrumental for the scientific study of long-term sea-level rise. In addition, they can form part of tsunami warning systems and also provide essential observations for use in coastal inundation (storm surge) modelling studies. It is the UKHO's intent to further expand this network under the OTSMP, CME Programme and any future overseas work under other programmes and will shortly be awarding a Marine Environmental Monitoring Station (MEMS) framework contract to a commercial company to streamline any future projects.



## 9. SPATIAL DATA INFRASTRUCTURES

**9.1 Status of MSDI.** The UKHO is actively developing the concept of Marine Spatial Data Infrastructure in line with the United Nations Committee of Experts on Global Geospatial Information Management (UNGGIM) Integrated Geospatial Information Framework.

**9.2 Relationship with the National Spatial Data Infrastructure (NSDI).** The UK does not yet have a recognised NSDI however, a UK Geospatial Commission was established in 2017 with partner bodies consisting of several national geospatial agencies, including the UKHO. This Commission is focused on unlocking the value of geospatial data within the UK and is currently establishing a UK Geospatial Strategy which is likely to form the foundation of a NSDI soon. The Commission is currently supporting several collaborative projects being undertaken by the UKHO which all have strong links to NSDI principles.

**9.3 Involvement in regional or global MSDI efforts.** The UKHO is an active member of the UN-GGIM Working Group on Marine Geospatial Information (WG-MGI) and Open Geospatial Consortium (OGC) Marine Domain Working Group (DWG), contributing towards Federated MSDI development and methodologies. The UKHO has recently upgraded its membership of the OGC from Technical to Strategic, bringing additional marine and maritime focus to the development of emerging technology and standards. The UKHO is also a member of the IHO MSDI Working Group and Chairs the SWPHC MSDIWG, the SAIHC MSDIWG, Vice-Chairs the MACHC MSDIWG and is represented on the BNSHC MSDIWG. The UKHO has also provided briefings on MSDI to other RHCs which do not yet have MSDIWGs, including half-day training and awareness workshops with a particular focus on MSDI Governance. The UKHO leads UK input into the UN-GGIM Americas Caribbean Geospatial Development Initiative (CARIGEO). We are actively working at creating the appropriate standards to support national and international MSDIs, a good example is our sponsorship of the OGC S-121 pilot study to develop a standard for the exchange of Maritime limits and boundaries, and our current co-sponsorship of the Federated Marine Spatial Data Infrastructure Pilot that consider S100 within an MSDI.

The UKHO is currently developing an IGIF-MSDI Maturity Roadmap to combine elements from the IGIF and MSDI ecosystem(s) of resources, as a simplified “Quick Start” guide or “Menu of Options” for developing nations seeking to implement an IGIF-aligned MSDI using OGC standards. This output seeks to avoid duplication and complexity, serving as an optional stepping-stone until interested nations decide to fully engage with the full spectrum of IGIF and MSDI resources (currently around 800 pages across both communities, hosted by UN-GGIM and IHO, excluding commercial, academic and national publications). The first version of this IGIF-MSDI Maturity Roadmap is being financially sponsored by UKHO within the OGC FMSDI project initiative, with input from fellow OGC FMSDI sponsors DGA (Kingdom of Denmark) as IHO MSDIWG Chair, plus contributions from the UN Statistics Division (UN-GGIM), the Co-Chairs of the WG-MGI (United States NOAA & Republic of Singapore MPA, latter also Vice-Chair of IHO-MSDIWG).

**9.4 National implementation of the Shared Data Principles** – including any national data policy and impact on marine data. The UKHO is a lead sponsor of the Marine Environment Data Information Network (MEDIN) which coordinates the delivery of INSPIRE obligations to Findable, Accessible, Inter-operable and Re-usable (FAIR) standards. The UKHO is actively engaged with projects directed by the UK Geospatial



Commission to improve the handling and publication of Government datasets. This work involves improving the discoverability of data as well as working towards a set of shared principles within UK Government. The UKHO also continues to produce Electronic Navigational Charts to the IHO S-57 standard which contains a defined structure for metadata and the modelling of maritime related features. Work is ongoing to transition to the of future IHO S-100 standards.

**9.5 MSDI national portal.** The UKHO has a Marine Data Portal that continues to grow and develop. As the organised gateway to our non-navigation data and services, it gives people easy and timely access to marine location-based information from seabed to surface to help them with sustainable marine decision making. The Portal allows users access to several free of charge datasets and services mainly covering UK territorial waters. The Portal also provides access to premium data sets which can be purchased. The underlying Marine Data Portal technology has the capability to host other agencies', or even other nation's datasets.

## **10. Autonomous Navigation**

**10.1** The UKHO have been engaging with several industry experts and project initiatives surrounding Maritime Autonomous Surface Ships (MASS) to try and understand the navigation data needs as momentum gathers in this area.

UKHO have proactively sought out a number of organisations such as Thales, Atlas Elektronik and TGP Polaris and discussed the issues with current products and services and have provided data to stimulate discussions about what they see as gaps in the current offering and identify the new products going forward.

In our work with industry operators, UKHO have supplied data to facilitate discussion and allow operators to explore what the future navigation service might look like.

The establishment of the Maritime Autonomous Surface Ships (MASS) Navigation Project Team (MASS PT) was approved at HSSC13 following a proposal by the United Kingdom, Norway and Singapore, to address Maritime Autonomous Surface Ships (MASS) requirements on navigation data and services, of which UK are Chair.

## **11. OTHER ACTIVITIES**

### **UK Celebrations for World Hydrography Day (WHD)**

**11.1** The UKHO celebrated World Hydrography Day 2021 by producing a short film to showcase the UKHO's rich history of partnerships. This included the 140 collaborative partnerships established across the globe and our Primary Charting Authority responsibilities for 71 coastal states, to the work carried out through our International Hydrographic Programmes and International Training. The theme was "*100 years of international cooperation in hydrography*" and a link to the film can be found [here](#). In 2021, UKHO recognised the achievements of the US National Oceanic and Atmospheric Administration's Office of Coast Survey (OCS) team with the Alexander Dalrymple Award.

**11.2** In January 2021, the UKHO hosted a virtual ADMIRALTY Blue Data Conference. This involved leading experts in Ocean Science, Marine Data and the Blue Economy discussing and exploring some of the defining questions for our ocean industries and the marine environment. The Conference attracted significant global reach and was well received by the audience. The ADMIRALTY Blue Data Conference is still available to watch online by going to <https://discover.admiralty.co.uk/blue-data-conference>

### **Broader UK Government Work**

**11.3** The UK Member State, consisting of the UK, the Overseas Territories and Crown Dependencies, was audited in late 2021 (delayed from late 2020 due to issues surrounding COVID-19) against the IMO Instrument Implementation Code's (IICC) and Mandatory IMO Member State Audit Scheme (MIMSAS). The work of the UKHO was specifically mentioned as an example of best practice in this field. This has raised awareness of the importance of maritime compliance and the benefits to everyone. To complement the work of the UKHO's OT SMP, the UK Maritime and Coastguard Agency have a UK Government aid funded programme to review maritime obligations compliance, search and rescue and oil pollution response.

**11.4** The Commonwealth Litter Programme (CLiP), is led by the UK through the Centre for Environment Fisheries and Aquaculture Science (Cefas). Funded by the UK Department for Environment, Food and Rural Affairs, the programme will support four developing countries across the Commonwealth to take action on plastics entering the oceans. The programme will contribute to the UK meeting its responsibilities under the Commonwealth Blue Charter, which calls for Commonwealth countries to drive action and share expertise on issues affecting the world's oceans, including marine litter. CLiP will contribute to delivering the objectives under the UK and Vanuatu-led Commonwealth Clean Oceans Alliance (CCOA), which calls on other countries to pledge action on plastics. CCOA also promotes actions in line with the United Nations Sustainable Development Goal 14 (life below water) to conserve and sustainably use the oceans, as well as contributing to the UK Government's 25 Year Environment Plan. The programme will work in the South Pacific, Caribbean and Africa. CLiP continues to work five with countries across the South Pacific. The programme encompasses the following five pillars:

- Land based sources of litter;
- Sea based sources of litter;
- Removal of litter from the marine environment;
- Science and Education; and
- Outreach.

**11.5 Blue Belt Programme:** The Blue Belt Programme supports delivery of the UK Government's manifesto commitment to provide long term protection of:

- improve scientific understanding of the marine environment
- develop and implement evidence based, tailored marine management strategies including surveillance and enforcement
- ensure management is sustainable and long term

The programme is being delivered in partnership between the Centre for Environment, Fisheries and Aquaculture Science (Cefas) and the Marine Management Organisation (MMO) with the UK Overseas Territories on behalf of the Foreign, Commonwealth and Development Office and the Department for Environment, Food and Rural Affairs. Between 2016 to 2021, the Blue Belt programme was funded by nearly £25 million from the Conflict, Stability and Security Fund. The Foreign, Commonwealth and Development Office has funded the Programme for 2021/22, with a further £8 million funding.

From the SWPHC region, the Blue Belt Programme has helped to develop and enhance marine protection in the Pitcairn Islands. Highlights include:

- The Blue Belt Programme has supported the Government of the Pitcairn Islands to strengthen the governance underpinning the MPA.
  - i. The programme supported the development of the new Pitcairn Islands MPA Management Plan, setting out clear guidance on the day-to-day management of the MPA. The plan is with the Island Council for approval during 2021.
  - ii. The Blue Belt Programme funded a new MPA Officer for the islands to implement the new management plan. The post will ensure effective management of the MPA and the programme is providing training and ongoing support to the officer.
- The programme has worked alongside the Government of Pitcairn Islands to better understand and protect its valuable marine life and coral reefs, as well as to manage the impacts of human activity.
  - i. To better understand the unique shallow waters around Pitcairn Island, the Blue Belt Programme and the Joint Nature Conservation Committee used unique cameras to create new seabed habitat maps for around the island. These maps are used to manage how boats anchor around the island, ensuring sensitive corals are not damaged.
  - ii. A new report card was produced on the impacts of climate change on the coral reefs of Pitcairn. Potential impacts on these reefs were assessed, as well as how Pitcairn can work to manage and mitigate them.

- iii. A new visitor interpretation board was developed in collaboration with the RSPB. The board will provide information on the different marine species visitors might see, including humpback whales and rare seabirds.
- In January 2021, the Blue Belt Programme also started to assist with the surveillance of Pitcairn's MPA.
  - i. This included the analysis and use of satellite imagery provided by OceanMind. Compliance in the MPA has been very high, with no confirmed instances of illegal activity over the last year.

Further information can be found in the [Blue Belt Annual Report 2021](#).

## 11.6 COP26

The UKHO provided material for the DEFRA's nature theme day and Department for Transport's Clydebank Declaration on green corridors at COP26 in Glasgow, November 2021. We also represented at the Glasgow University College Campus where we raised awareness of the challenges of marine data paucity and its impact on the environment.

## The UKHO's International Activities

**11.7** Due to the UKHO's technical expertise, primary charting responsibilities and UK OTs the UK is represented at the following groups:

International Hydrographic Organization - HSSC		Chair/Vice Chair	Member
HSSC	Hydrographic Services and Standards Committee		x
DQWG	Data Quality Working Group		x
ENCWG	ENC Standards Maintenance Working Group	x	x
NCWG	Nautical Cartography Working Group	x	x
NIPWG	Nautical Information Provision Working Group		x
S-100WG	S-100 Working Group		x
S-101PT	S-101 ENC Project Team	x	x
S-102PT	S-102 Bathymetric Surface Project Team		x
S-121PT	S-121 Maritime Limits and Boundaries Project Team		x
S-124PT	S-124 Navigational Warnings Project Team		x
S-130PT	S-130 Polygonal Project Team		x
S-131PT	S-131 Marine Harbour Infrastructure Project Team		x
TWCWG	Tides, Water Level & Currents Working Group	x	x
HSWG	Hydrographic Survey Working Group	x	x
MASS PT	Maritime Autonomous Surface Ships Navigation Project Team	x	x
ABLOS	Advisory Board on the Law of the Sea		x
IRCC	Inter-Regional Coordination Committee		x
CBSC	Capacity Building Sub-Committee		x
CSBWG	Crowd-sourced Bathymetry Working Group		x
MSDIWG	Marine Spatial Data Infrastructure Working Group		x
WENDWG	Worldwide ENC Database Working Group		x
WWNWS	Worldwide Navigational Warning Service		x
HCA	Hydrographic Commission on Antarctica		x
MACHC	Meso American and Caribbean Sea Hydrographic Commission	x	x
MBSHC	Mediterranean and Black Seas Hydrographic Commission		x
NIOHC	North Indian Ocean Hydrographic Commission		x
NSHC	North Sea Hydrographic Commission		x
RSAHC	ROPME Sea Area Hydrographic Commission		x
SAIHC	Southern African and Islands Hydrographic Commission	x	x
SWPHC	South-West Pacific Hydrographic Commission		x
EAtHC	Eastern Atlantic Hydrographic Commission		x
International Maritime Organization		Chair/Vice Chair	Member
NAVTEX	NAVTEXT Coordination panel	x	x
International Association of Marine Aids to Navigation and Lighthouse Authorities		Chair/Vice Chair	Member
ENAV	E-navigation Committee		x
Other International Bodies		Chair/Vice Chair	Member
IAU	International Astronomical Union		x

International Hydrographic Organization - HSSC		Chair/Vice Chair	Member
CIRM	Comité International Radio-Maritime		x
BALTICO	Navarea I member states meeting		x
ISO	International Standards Organisation		x
OGC	Open Geospatial Consortium		x
UNGGIM WGMGI	UNGGIM Working Group on Marine Geospatial Information		x
CARIGEO	Caribbean Geospatial Development Initiative		x

## 12. CONCLUSION

As with 2020, the UK has continued to experience significant impact due to the COVID-19 pandemic. Most of our workforce has, for more than half of the year, been working from home in an effort to reduce the spread and infection rate. Following recent changes to the UK's pandemic restrictions, we now anticipate that many of our staff will gradually return to the office, but that we will also work in a more hybrid way so that we do not lose some of the positive aspects of the changes we have made over the last two years. The widespread acceptance of working from home and flexible working means that we can continue to be focussed on safe, secure and thriving oceans and can do so in a more collaborative and more inclusive way.

We continue to recognise the critical importance of SOLAS. Our prioritisation of safety products and services to the mariner reflects the importance of safer navigation and we continue to revise and maintain paper and electronic portfolios of charts and publications; introduce new adoptions, New Charts, New Editions and New Cells, where appropriate.

The UKHO remains committed to the South West Pacific region. This commitment is demonstrated through our primary charting responsibilities, our continuing interest in developing regional hydrographic self-sufficiency and through capacity building measures. We also recognise the need to provide support which empowers local hydrographic offices and is sustainable over the long term. To this end, we will continue to work alongside other UK government bodies to deliver coherent and impactful work in the region. We are also committed to building and maintaining dialogue with partners to maximise the value of the important hydrographic work of the region.

Over the past year we have been grateful for the support, encouragement and positive feedback that our partners have provided in response to the launch of our online training academy. More than 3000 training places have been provided to the hydrographic community worldwide. Alongside this effort, we have provided additional support to countries in the South West Pacific region while working to better develop our understanding of the needs of the community. We are pleased to have been able to support the development of the Hydrographic Leaders programme and we look forward to making a positive contribution in the coming months.

Last year we reported that we did not achieve everything we set out to do, with some plans curtailed, others postponed and zero opportunity for in-person engagement with our partners and colleagues. While the challenges this year have been similar, we have found more and more innovative ways to sustain our work with the region and we look forward to consolidating this in the coming year.

**Taunton February 2022**

## UKHO POINTS OF CONTACT

**UKHO Website:** [GOV.uk/UKHO](https://gov.uk/ukho)

The general UKHO address is:

UK Hydrographic Office,  
Admiralty Way,  
TAUNTON  
Somerset  
TA1 2DN  
United Kingdom

For further information on this report, UKHO representation in international fora, and UKHO activities in general, please contact:

E-mail: [IBTE@ukho.gov.uk](mailto:IBTE@ukho.gov.uk)

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For bilateral arrangements and other international partnering matters within the SWPHC region, please contact:

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Head of Partnering & Engagement, Asia Pacific

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### **Mr Jeremy Kitchker**

International Training Manager

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For charting matters in the SWPHC region, please contact:

### **Mr Lee Truscott**

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### **Mr Daniel Miners**

Geographic Manager – South Pacific (from April)

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For matters related to **Sailing Directions** within the SWPHC region, please contact: Email:

[SDImpactAnalysis@ukho.gov.uk](mailto:SDImpactAnalysis@ukho.gov.uk)

&

### **Mr Paul Hardacre**

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Telephone: +44 (0) 1823 483427

Input to the IHO Publication P-5 (Yearbook)  
United Kingdom of Great Britain and Northern Ireland

<b>Country information / Informations sur le pays/ Información sobre el país</b>	
-Declared National Tonnage -Tonnage national déclaré -Tonelaje Nacional Declarado	40,631,143 ton
National day -Fête nationale -Fiesta nacional	Second Saturday in June (Queen's Official Birthday)
-Date first joined IHO -Date d'adhésion à l'OHI -Fecha de adhesión a la OHI	21/06/1921
-Date ratification Convention -Date de ratification de la Convention -Fecha de ratificación de la Convención	03/05/1967
Official Representative to IHO (as designated by Member Government) <b>UNITED KINGDOM HYDROGRAPHIC OFFICE</b>	
<b>Contact information/ Informations de contact / Información de contacto</b>	
-National Hydrographer or equivalent -Directeur du service hydrographique ou équivalent -Director del Servicio Hidrográfico o equivalente	RAAdm Rhett Hatcher - National Hydrographer & Director Data Acquisition and Defence Postal address: Admiralty Way TAUNTON Somerset, TA1 2DN United Kingdom Tel: + 44 (0) 1823 484444 E-mail: IBTE@UKHO.gov.uk
Other point(s) of contact -Autre(s) point(s) de contact -Otros punto(s) de contacto	
-Web site -site web -sitio web	<a href="http://www.gov.uk">http://www.gov.uk</a>
<b>Agency information</b>	
Date of establishment	12 August 1795
Relevant National Legislation	TS Baseline 25.09.64 12nm TS Limit 15.05.87 200nm EFZ 22.12.76
Top level parent organization	Ministry of Defence
Principal functions of the organization or the department	Publication of analogue and digital navigational charts and supporting publications, transmission of maritime safety information, Notices to Mariners (weekly), provision of geodetic, oceanographic and geophysical data and publications to meet defence requirements. Provision of tidal information and Ocean currents
Number of INT charts published	970
Total number of paper charts	3500 (Approx)
Number of ENC cells published	1771 GB cells

Number of Raster Charts	582
Number of Other Charts	52
Type of publications produced	Full suite of Admiralty Charts and Publications including some digital products. For details see UK Catalogue of Admiralty Charts and Publications (NPI 31) or the UKHO web site: <a href="http://www.gov.uk/UKHO">http://www.gov.uk/UKHO</a>

Other Organizations providing national Hydrographic Services  
Autre Organismes fournissant des services hydrographiques au niveau national.

**CAPTAIN HYDROGRAPHY & METEOROLOGY AND  
HYDROGRAPHER OF THE NAVY**

Contact information / Informations de contact / Información de contacto			
Head of the Hydrographic Office (if different from the person indicated above) -Directeur du service hydrographique (si différent de la personne indiquée ci-dessus) -Jefe del Servicio Hidrográfico (si es diferente de la persona indicada anteriormente)	Head of Hydrographic Office - Royal Navy. Hydrographer of the Navy Cdr Matthew Warren Commander HM Tel: + 44 (0) 300 161 8853 Fax: + 44 (0) 1752 555844 E-mail: <a href="mailto:Matthew.warren967@mod.gov.uk">Matthew.warren967@mod.gov.uk</a>		
Other point(s) of contact -Autre(s) point(s) de contact -Otros punto(s) de contacto	Postal address: SURFLOT, Defiance Building HM Naval Base Devonport, PLYMOUTH, Devon, PL2 2BG, United Kingdom of Great Britain and Northern Ireland		
Agency information / Information sur l'agence / Información sobre la agencia			
Top level parent organization -Organisme mère -Organización asociada de nivel superior	Ministry of Defence - Fleet Commander		
Principal functions of the organization or the department -Attribution principales de l'organisme ou du département - Principales funciones de la Organización o el departamento	Commander of RN ships, units and personnel engaged in collection analysis and dissemination of all forms of geospatial information through the hydrographic, meteorological and oceanographic disciplines		
Detail of surveying vessels/ Aircraft -Détail des bâtiments hydrographiques/aéronefs -Detalle de buques hidrográficos/Aeronaves	Displacement -déplacement -Desplazamiento - Fecha de puesta en servicio	Commissioning Date -date de mise en service	Crew -équipage -Personal
HMS SCOTT (H131)	13500	1997	63
HMS PROTECTOR	5000	2011	88
HMS ECHO (H87)	3470	2002	72
HMS ENTERPRISE (H88)	3470	2002	72
HMS MAGPIE (H130)	37	2018	12

<p>Other information of interest -Autres informations utiles -Otra información de interés</p>	<p>HM personnel are also borne in other RN vessels. Comander HM directs all hydrographic, meteorological and oceanographic support to the fleet. The programme for Civil hydrography in UK waters is managed by the Maritime &amp; Coastguard Agency and is outsourced to the commercial sector</p> <p>Training in hydrographic surveying and meteorology is provided for naval personnel by the</p> <p>Commander Fleet Operational Training - Hydrography, Meteorology and Oceanography</p> <p>HMS DRAKE HM Naval Base</p> <p>Devonport</p> <p>PLYMOUTH</p> <p>Devon PL2 2BG</p> <p>Details of courses are available at:</p> <p><a href="http://www.mod.uk/DefenceInternet/AboutDefence/Whatwedo/TrainingandExercises/IDT/IDTRN">www.mod.uk/DefenceInternet/AboutDefence/Whatwedo/Training and Exercises/IDT/IDTRN</a></p>
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Input to the IHO Publication C-55 (Status of Hydrographic Surveying and Charting Worldwide)  
Country: United Kingdom of Great Britain and Northern Ireland

Country: Pitcairn Dependencies

C-55 Summary for:				Comments on Charts:
Country:	Pitcairn Dependencies			No coverage between 1:90 and 1:350,000 4 main islands covered by scales greater than 1:90,000
Country Iso Code:	PN			
Country SubCode:				
INT Region:	L			
Country/Depend:				
Last updated:	01/02/2021			
Provided by:	UK			
<b>Chart coverage</b>	<b>Passage (%)</b>	<b>Coastal (%)</b>	<b>Port (%)</b>	
INT	100	0	0	<b>Comments on Surveys:</b>
RNC	100	0	100	
ENC	100	0	0	
<b>Status of Paper Charts</b>				
Paper charts with depths in meters (%)			100	
Paper charts referenced to a satellite datum (%)			90	
<b>Status of surveys</b>	<b>Adequate (%)</b>	<b>Resurvey (%)</b>	<b>No survey (%)</b>	
0-200m	0	0	100	
> 200m	0	0	100	
<b>MSI</b>	<b>Y/N</b>	<b>Comments on MSI:</b>		
Local warning	Unknown	Local authority responsibility - no requirement to promulgate internationally.		
Coastal warning	YES	Only via NAVAREA coordinator & SafetyNET. Available/offered, but not currently used.		
Nav warning	YES	Only via NAVAREA coordinator & SafetyNET.		
Port warning	YES			
<b>GMDSS</b>	<b>Y/N</b>	<b>Comments on GMDSS:</b>		
Master Plan	NO			
Area A1	NO			
Area A2	NO			
Area A3	NO			
NAVTEX	NO			
SafetyNet	NO			

National MSI Self-Assessment  
Country: United Kingdom – Pitcairn Dependencies  
Organization: United Kingdom Hydrographic Office

## 1. Maritime area

*Waters around the Pitcairn Islands*

## 2. Operational Points of Contact for the National Coordinator

INSTITUTION	TELEPHONE	FACSIMILE	EMAIL
NAVAREA I Coordinator	+44(0)1823 353448	+44(0)1823 322352	navwarnings@ukho.gov.uk

## 3. GMDSS Master Plan

*GMDSS Master Plan up to date – not applicable for this country*

Equipment Type for Ports and Local Area	Software Version	Date of Up-date

Year Y-2		Year Y-1		Year Y	
Total	Average elapsed time	Total	Average elapsed time	Total	Average elapsed time
xx	xx.x Mins	xx	xx.x Mins	xx	xx.x Mins

## 4. NAVTEX Coverage: N/A

## 5. Operational Issues: N/A

## 6. Contingency Planning: N/A

## 7. Capacity Building: N/A

## 8. Other Activities: N/A

## 9. National Maritime Website: N/A

## 10. Recommendations: Nil

11. Summary: *There is no maritime radio station on Pitcairn Island apart from a local VHF station to communicate with visiting cruise ships.*

Any MSI in the area may be sent to UKHO for assessment and then forwarded to NAVAREA Co-ordinators for NAVAREAs X (Australia) and XIV (New Zealand), which cover the SWPHC area with recommendations for EGC broadcast as a Navigational Warning.