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International Hydrographic Organisation

REPORT OF TECHNICAL VISIT (HYDROGRAPHY) TO TUVALU

Technical Visit Dates: 5th to 10th November 2016

Report Version Final 1.1 – 1st Feb 2017

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Commonly Abbreviated Terms

ABD	Asian Development Bank
AtN	Aids to Navigation
BA	British Admiralty
BoM	(Australian) Bureau of Meteorology
GoT	Government of Tuvalu
EEZ	Exclusive Economic Zone
HMNZS	Her Majesty's New Zealand Ship
IHO	International Hydrographic Organisation
LINZ	Land Information New Zealand
LOA	Length Over All
MFAT	Ministry of Foreign Affairs and Trade (New Zealand)
MPA	Marine Protected Area
MSI	Maritime Safety Information
NHC	National Hydrographic Committee
NtM	Notice to Mariners
PCA	Primary Charting Authority
PMSP	Pacific Maritime Safety Project
PRNI	Pacific Regional Navigation Initiative
RHC	Regional Hydrographic Commission
RAN	Royal Australian Navy
RNZN	Royal New Zealand Navy
SAR	Search and Rescue
SIDS	Small Island Developing States
SOLAS	Safety of Life at Sea (International Convention)
SPC	(Secretariat of the) Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
SWPHC	South West Pacific Hydrographic Commission
TAV	Technical Assessment Visit
UKHO	United Kingdom Hydrographic Office

1. Executive Summary

Tuvalu is small island state in the Pacific, with a land area of only 26km^2, an EEZ of 717,174km^2 and a population of under 11,000 people. Tuvalu is not currently a member of the IHO, but is an associate member of the SWPHC. A hope to join the IHO in the future was expressed by officials.

A successful hydrographic technical assessment was undertaken by personnel from the UK Hydrographic Office with assistance from personnel of the Pacific Community during November 2016.

The primary source of shipping within Tuvalu is the transhipment of fish and incoming cargo for the islands. The Government also operates a passenger and supply vessel for the outer islands.

The Marine and Port Services Department, who fall under the Ministry of Communications and Transport, are both the government maritime administration and port operator.

There is capability for a basic maritime safety information service within Tuvalu, but currently no formal structure. The status of surveys in Tuvalu is limited, with the majority of waters entirely un-surveyed. There is no current capacity to undertake any seabed mapping within Tuvalu, and no increase in capacity is likely in the near future. Therefore, survey activity should be explored through external agencies. The UK Hydrographic Office currently maintain a small series of British Admiralty Charts for Tuvaluan waters, although these are not able to fully support all users. Tuvalu expressed their concern to UKHO, in March 2015, over the lack of large scale charting across the islands. UKHO highlighted the lack of modern survey data and their willingness to assist in assessing the technical requirements for suitable charting across the area.

A range of recommendations have been made by the assessment team, including formalisation of the MSI structure, formation of a National Hydrographic Committee, and seeking all opportunities to obtain survey data and improve current charting.

2. Background

Tuvalu is a group of nine small coral atolls in the South West Pacific. Formerly known as the Ellice Islands, all are low-lying, with no point on Tuvalu being higher than 4.5m above sea level. The total land area is approximately 26km^2, with a coastline of approximately 24km and an EEZ of 717,174km^2. The current population is around 10,959 (2016 est.) people, the majority of which live on Funafuti, which is also the capital.

One of the smallest and most remote countries on Earth; several of the coral atolls - Nanumea, Nui, Vaitupu, Nukufetau, Funafuti, and Nukulaelae - have lagoons open to the ocean; Nanumaya and Niutao have landlocked lagoons; Niulakita does not have a lagoon.

The capital of Tuvalu is sometimes given as Fongafale or Vaiaku, but the entire atoll of Funafuti is officially the capital.

At the 13th SWPHC Meeting held in Cook Islands in 2015, UK announced its intention to request a Technical Visit to Tuvalu as an IHO Capacity Building activity. This request was duly submitted on behalf of Tuvalu resulting in the approval of a Technical Assessment Visit for inclusion in the 2016 CB Workplan, to be led by the United Kingdom Hydrographic Office (UKHO).

Final financial approval was given by the IHB on the 21st October 2016, and the Technical Visit took place between the 5th and 10th November 2016.

The following figures are provided to give geographical context.

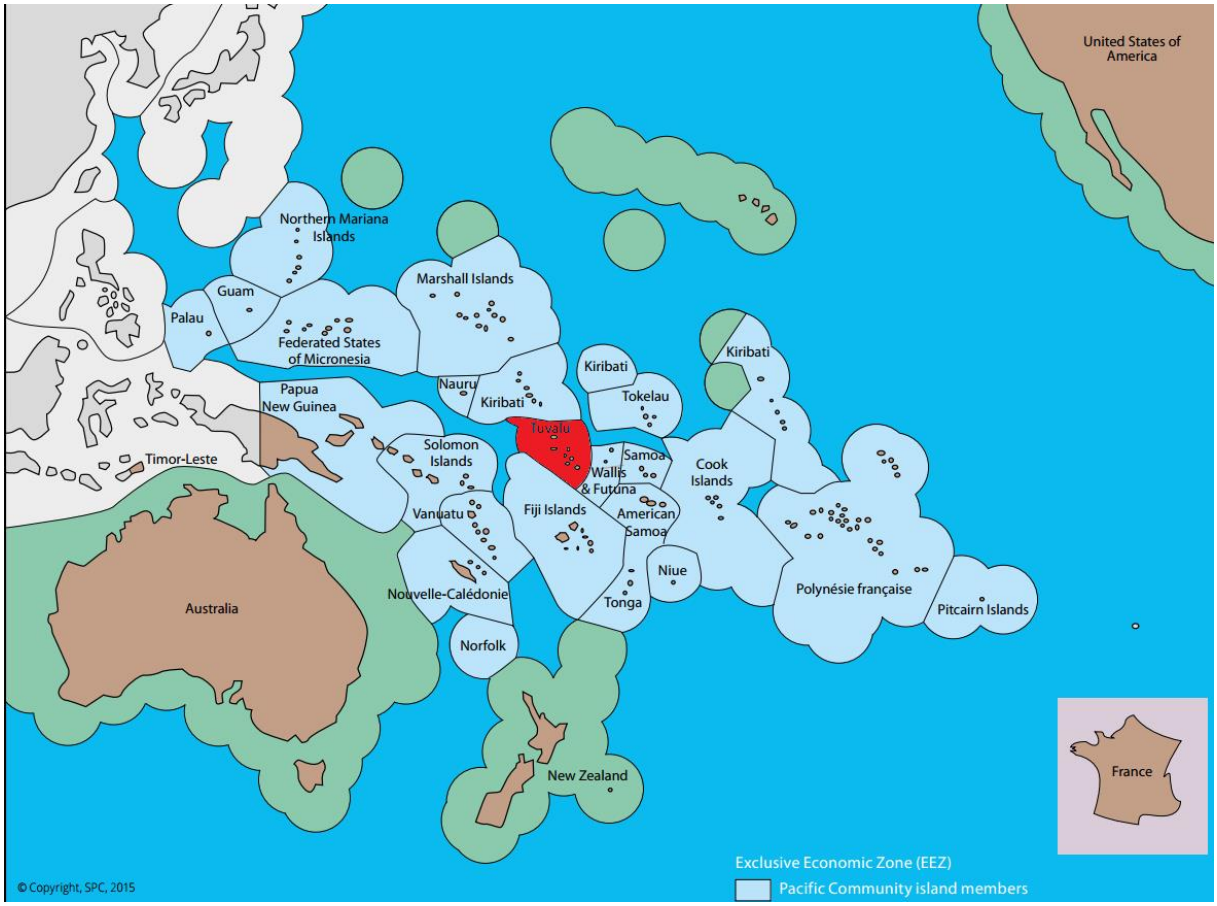

Figure 1 – Tuvalu approximate EEZ (in Red) and adjoining approximate EEZs

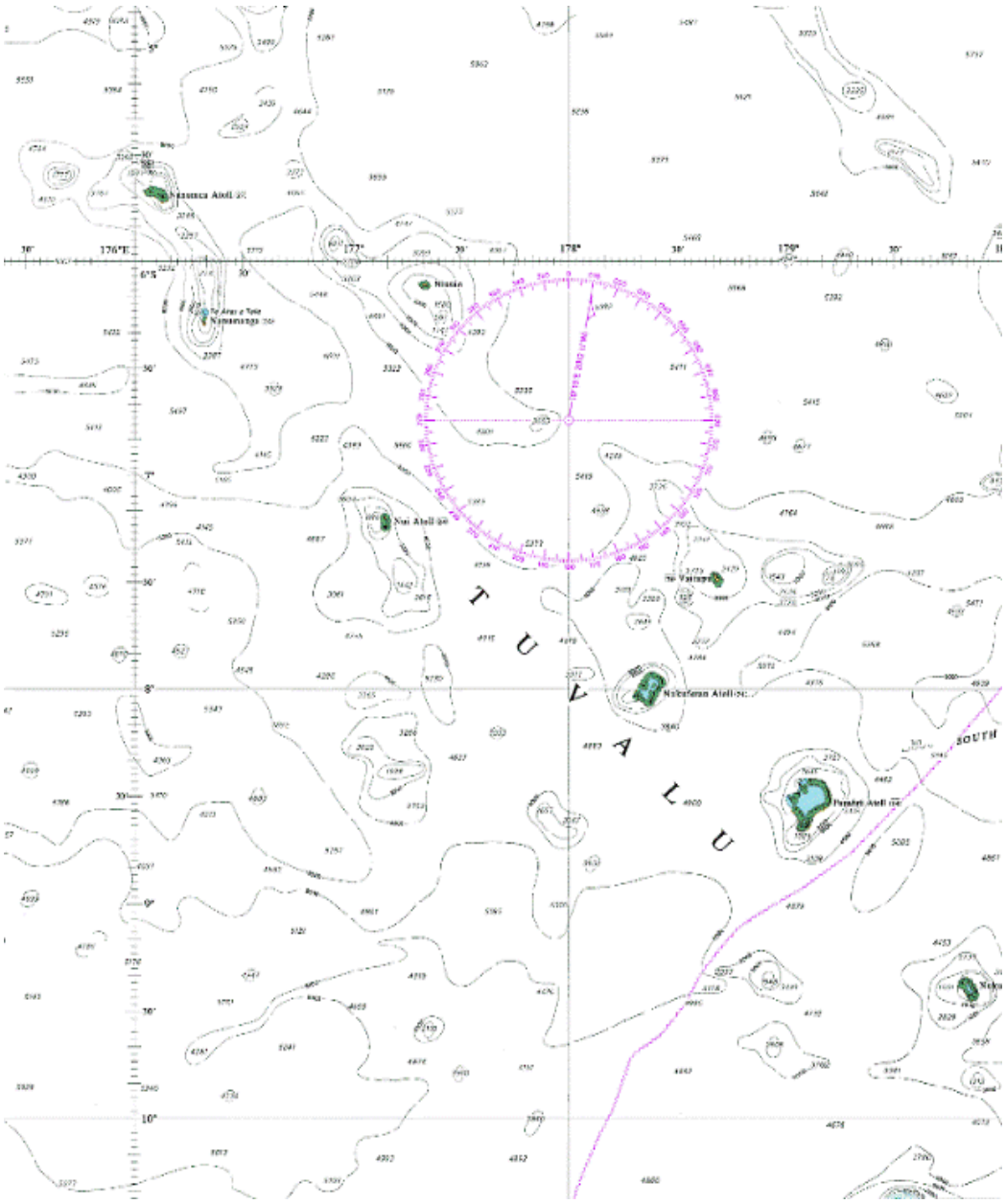

Figure 2 – Tuvalu Islands – Extract of BA Chart 4625

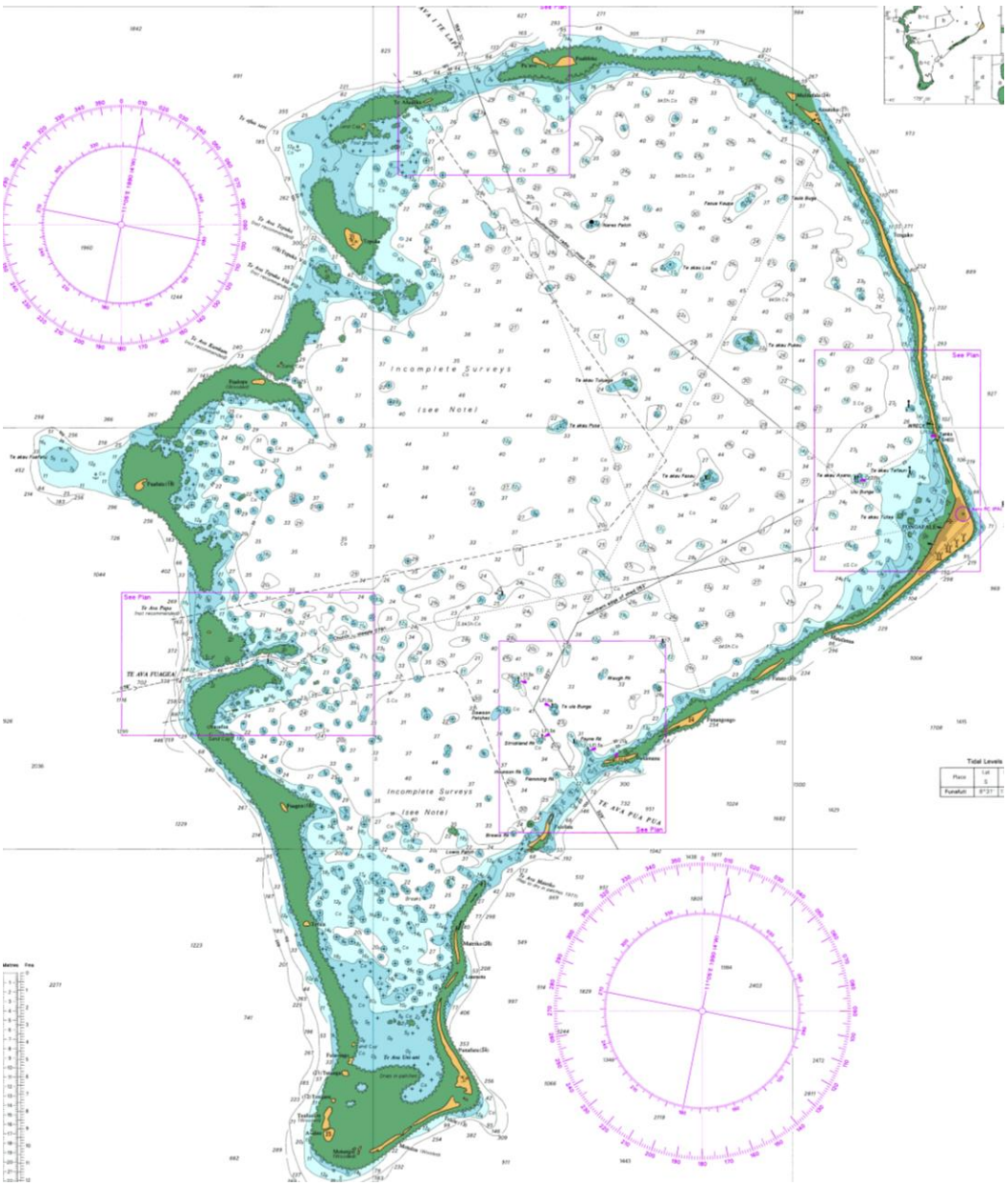

Figure 3 – Funafuti Atol – BA Chart 2983 (Note: the only official larger scale chart currently available for the islands).

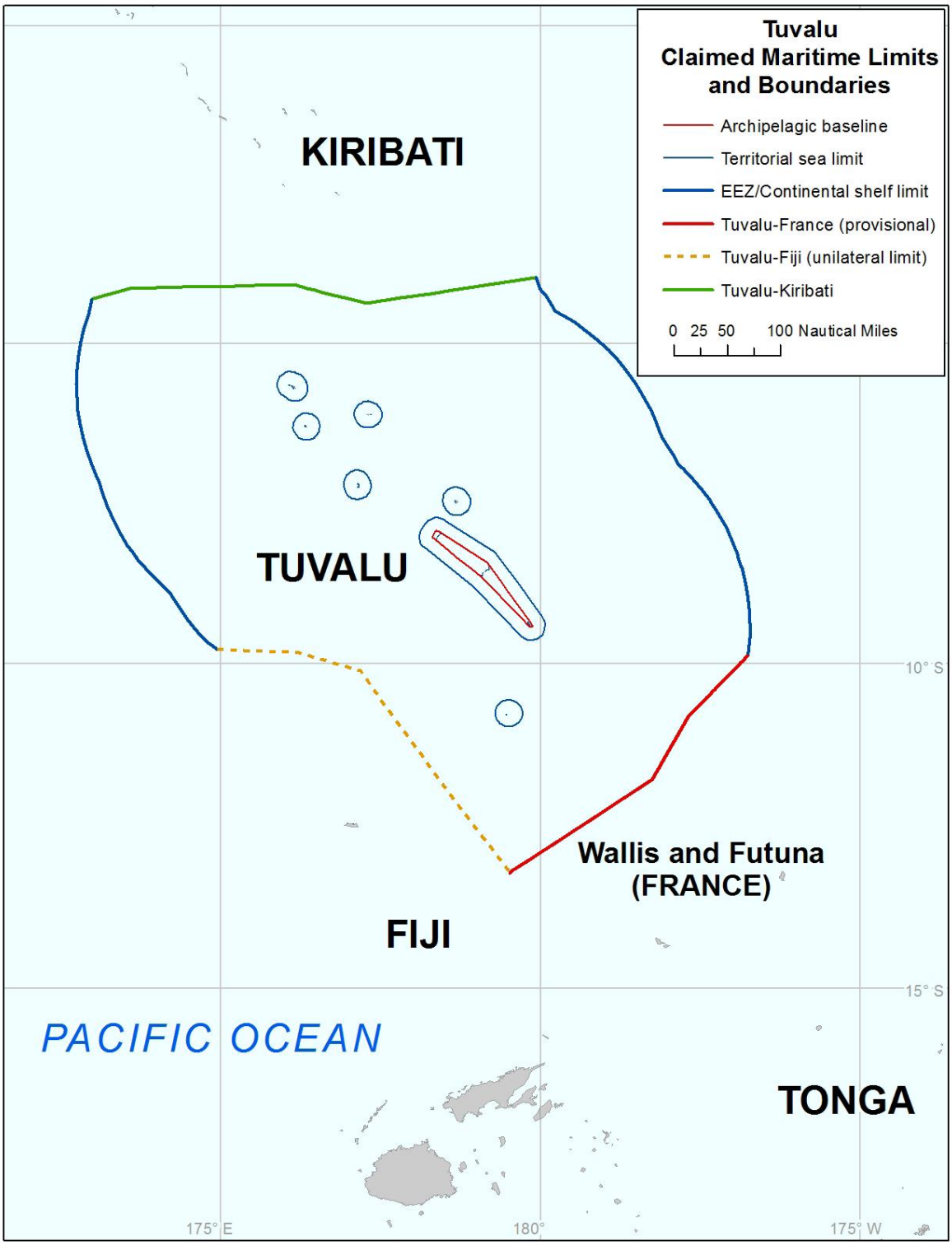

Figure 4 – Tuvalu's Maritime Limits

3. Composition of Team.

Name	Role
David Parker (DP)	Team Leader (UKHO Hydrographic Development Advisor)
Dave Mundy (DM)	Team Member (Pacific Community [SPC] Senior Hydrographic Surveyor)
Hazel Newman	UK Based Researcher (did not accompany team) (UKHO Hydrographic Projects Support)

4. Efficacy of the Technical Visit.

Prior to deployment, the team were in direct contact with Ms Mati Afelee, Development Programme Coordinator, New Zealand Aid Programme Office, Tuvalu, who acted as the local coordinator to approach stakeholders. This proved to be very effective and successful. Several full days were spent with Taasi Pitoi (TP), Director of Marine and Port Services, who in turn provided access to all other parties in the maritime sphere. The team held a meeting with Hon Minister Monise Laafai, Minister of Communications and Transport, followed by a meeting with Mr Temate Melitiana, (Permanent) Secretary Ministry of Foreign Affairs, Trades, Tourism, Environment & Labour. Both were very engaged in the subject of safer navigation in Tuvalu as well as encouraging access for vessels.

A half day meeting was held with key stakeholders, including the Marine and Ports Dept, Fisheries Dept, Lands and Survey Division, Climate Change Policy and Disaster Coordination as well as navy and police advisors from Australia and New Zealand. All parties reported that the key maritime issue for Tuvalu was the quality of charts and underlying surveys, which restricted the efficacy of most other activity. TP and Minister Laafai were keen to see improvements to the available data and charting for Tuvalu.

5. Co-operative Arrangements and Potential.

There are many small island developing states (SIDs) within the Pacific and these are well served by a number of regional organisations and development partners to assist them achieve their development goals.

a. Regional Organisation.

The two main regional organisations delivering geospatial outputs that operate in the Pacific are the Pacific Community (SPC) and the Secretariat of the Pacific Regional Environment Programme (SPREP), both of which are active in Tuvalu.

Through its Economic Development Division (EDD), SPC provides assistance to Tuvalu's Maritime Transport and SAR sector, primarily comprising regulatory and institutional advice. The SPC Geoscience Division has undertaken numerous geophysical and surveying activities for Tuvalu and is an implementing partner with Land Information NZ (LINZ) in the Pacific Regional Navigation Initiative (PRNI) that

has Safety of Navigation improvement outcomes. SPC was involved in all aspects of the TAV and contributed a Team Member (Dave Mundy).

b. Development Partners.

There are many Development Partners active in Tuvalu. Of these, New Zealand contributes to hydrographic improvements through the PRNI (see above) and Pacific Maritime Safety Project (PMSP) which included an upgrade of the Aids to Navigation (AtN) throughout Tuvalu and the recent review of maritime institutional and regulatory arrangements.

c. Defence and Security Arrangements.

By virtue of its small size, Tuvalu does not have a dedicated defence force and relies entirely on larger, established countries such as Australia and New Zealand to provide for regional security. Australia, through the Pacific Patrol Boat (PPB) program, has donated a patrol boat for Tuvalu to patrol its exclusive zone to counter illegal fishing, an activity which is also augmented with the provision of a Vessel Monitoring Service (VMS) by the Pacific Island Forum Fishing Agency. The Tuvalu patrol boat, HMTSS TE MATAILI participates in Foreign Fishing Vessel (FFV) boarding operations in collaboration with Australian and New Zealand naval vessels.

HMTSS TE MATAILI is operated by the Police Maritime Wing, with assistance and oversight provided by an in-country Maritime Surveillance Advisor (MSA), a position filled by a serving Royal Australian Navy (RAN) Naval Officer (normally a LTCDR). Tuvalu's Search and Rescue (SAR) responsibility and capability also resides with the Police Maritime Wing with regional coordination and assistance from NZ. The Police Maritime Wing have indicated that they may be able to operate an MSI coordination role, and also man a radio watch to broadcast local MSI alongside their SAR role.

6. IHO / RHC Involvement.

Tuvalu is not a member of the IHO, but did attend the South West Pacific Hydrographic Commission's 13th meeting February 2015 as an Observer, and stated an intention to attend the 2016 SWPHC in December. Tassi Pitoi stated that they would like to join IHO, in part to access capacity building. Hon Minister Monise Laafai, Minister of Communications and Transport also supports this view. DP and DM recommended that they have a clear view on this for the next RHC in December 2016.

7. Preliminary Liaison.

Collaboration with regional CB initiatives already underway in Tuvalu was required to avoid duplication of effort and achieve maximum benefit from the limited time in country. Such initiatives included the SPC/NZ Ministry of Foreign Affairs and Trade (MFAT) PRNI and NZ MFAT Pacific Maritime Safety Program (PMSP), both with interests in the hydrographic sphere. The dates for the TAV were set to align with an in-country deployment of a Maritime Legislative and Institutional Review TA Team, part of the PMSP, enabling effective cross-cutting in the area of Hydrographic Governance.

Official notification of the TAV was provided to Tuvalu Government officials via a SPC Mission Advisory Letter. Such notification is a pre-requisite for all visits to member

countries by SPC personnel; in this instance, the intention to undertake the visit jointly with the UKHO was also explained.

Assistance with making local arrangements and development of a visit program was provided by the NZ MFAT in-country Development Programme Coordinator, Ms Mati Afelee. Such assistance was vital in securing appointments with officials and appropriate attendance at the stakeholder group meeting.

8. Points of Contact.

The details for Tuvalu contained in the IHO Year Book were found to be outdated and an updated version, using the template available from the IHO website, is provided at Annex C.

In Tuvalu, the nationally accepted focal point for hydrography is the Director of Maritime and Ports, Mr Taasi Pitoi, who has been the country representative at the previous two SWPHC Meetings since Tuvalu obtained observer status. As with many small Pacific Islands, the responsibilities of government officials often extends across many areas, and Mr Pitoi faces a considerable challenge to devote time and resources to hydrography amidst his other demanding portfolios.

A review of the institutional and legislative arrangements for the maritime sector has recently commenced (as part of the PMSP) – one of the proposed changes is to separate the regulatory and operational functions currently undertaken by Mr Pitoi and establish key positions undertaking mandatory roles such as an MSI coordinator.

Description of Maritime Activities

9. National Maritime Affairs.

The Marine and Port Services Department, who fall under the Ministry of Communications and Transport, are both the government maritime administration and port operator. They are currently undertaking a study on their remit and activities with a view to providing a better and more effective structure. Safety of navigation, hydrography and MSI are covered within this review.

Five small shipping agents operate at the port – one for container and bulk (fuel) vessels, one for small cargo and irregular cruise vessels, and three for deep sea fishing vessels. All are local and privately owned.

The populations on the outer islands have no medical facilities, so government vessels undertake medical evacuations using their vessels back to Funafuti.

Fisheries Department have two vessels which undertake both research and enforcement.

The police operate a 32m maritime patrol vessel – run by police with assistance from RAN advisor.

10. Trade and Maritime Traffic.

The following vessel statistics for vessel visits to Funafuti were supplied by Marine and Port Services;

	Year			
Type	**2016 (to Nov)**	**2015**	**2014**	**2013**
PURSE SEINER	77	194	49	7
LONG LINER	0	0	2	2
CONTAINER	14	24	22	18
GENERAL CARGO	5	9	13	21
BARGE	1	5	0	1
FISH CARRIER	12	34	0	0
MOTHER SHIP	13	1	15	3
TANKER	5	5	5	6
TUG BOAT	2	3	0	0
NAVY VESSEL	1	4	1	1
CRUISE SHIP	0	1	1	0
REEFER / FISH CARRIER	12	60	5	0
MISC	1	4	11	2

a. Through Routes.

No major routes pass through Tuvaluan waters.

b. Transhipment. Comment on the existence of any hub ports.

Cargo ships can enter Funafuti's lagoon and dock at the port facilities on Fongafale.

Perhaps the most significant driver for shipping activity in Funafuti is the transhipment of deep ocean fish, which are brought into the Funafuti lagoon on smaller ocean going fishing vessels (purse-seiners and long-liners), then transferred to 100m+ refrigerated cargo vessels. These vessels may be anchored for days to weeks in the lagoon while they offload the fishing vessels. There may be up to 12 reefer vessels in the lagoon at any one time. Marine and Port Services reported that most fish transhipment goes to Thailand.

Figure 5 – Fish refrigerated transhipment vessels at anchor in the Funafuti Lagoon.

c. Bulk Trades.

The only bulk trade landing in Funafuti is tankers, which bring all of the diesel and petrol required for all of the islands, as well as aviation fuel for the airport. Note: all power generation on Tuvalu is provided by diesel generators supplemented by solar.

There is also some limited break-bulk (e.g. cement).

Landing of containers and fuel is limited to two jetties, which can often not be used during periods of westerly winds. Offloading of containers is reliant upon vessel mounted cranes.

Tuvalu has no known exports (other than people).

d. Feeder, Coasting and Local Trade.

There is domestic shipping of cargo and passengers from Funafuti Port to the outer islands of Tuvalu, primarily using the vessel Nivaga III which has capacity for up to 400 passengers, 40 crew plus cargo. There is also the Nivaga II, although the government is actively seeking to sell or dispose of this vessel).

As there are no suitable approach charts for the outer islands and limited AtN, final navigation approaches to the outer islands are done visually, utilising GNSS plots of previously known safe tracks and anchorages.

e. Offshore Supply and Support.

There are no offshore supply or support vessels based in Tuvalu. A large dredge and ocean-going tug was working out of Funafuti as part of a recent project to fill numerous pits created during WWII in the construction of the airstrip (NZ MFAT Tuvalu "Borrow Pit" Project). An area of lagoon foreshore adjacent the main government building has been reclaimed as an additional activity to this project utilising the dredge.

A major infrastructure project funded by the Asian Development Bank (ADB) is in the advanced planning stages for the construction of a small-scale harbour in Nukulaelae and the rehabilitation of boat ramps of Nanumaga and Niutao. With an estimated cost in excess of USD$10M, this project will require significant logistic support, mainly comprising the transport of equipment and material, all of which will need to be shipped to the islands. The government has recently (2015) acquired a Landing Craft Tank (LCT) "Tai Manino" ex NZ to improve its ability to support such activity, although maintenance issues with this vessel and an inability to safely access all but three outer islands renders it of minimal use. Further details of the ADB project "Outer Island Infrastructure Project" can be downloaded from the following link:

https://www.adb.org/projects/48484-002/main

f. Tourism - Cruise Liners.

One Japanese cruise operator was reported to have stated that they want to start more regular visits. Cruise traffic stated to be increasing, but currently one every two years. Currently only "adventure" cruises suited, as there is no infrastructure ashore to deal with more than around 100 passengers at a time (and no accommodation ashore).

Currently vessels anchor in the Funafuti lagoon and use boats to ferry ashore.

The Ministry of Foreign Affairs and Tourism stated a wish to increase small scale cruise traffic.

g. Tourism - Small Craft.

A small number of typically 15-20m yachts visit the islands, often in small groups (3-6 vessels). They normally avoid the period of westerly winds / cyclone season from November to April. Approx. 20 yachts per year visit Funafuti. No records are available for the outer islands.

One mega-yacht reported 2014 – 60m LOA.

h. Fisheries.

Fairly active pelagic fisheries exist within and adjacent to the Tuvalu EEZ – predominantly tuna. The majority of vessels are apparently from Korea and Taiwan. Fish transhipped in Funafuti (which may not have been caught in Tuvalu). The number of visiting large (up to 100m LOA) fishing vessels is approximately 2-4 per week during the tuna season. Many of the fishing vessels carry helicopters to act as spotters.

The police marine patrol vessel enforce fisheries policy within the EEZ, but are only at sea occasionally. The same vessel also provides SAR cover.

There are a relatively large number of small local craft (from paddle canoes to small skiffs with outboards) who fish in the lagoons or within a few miles of the islands. All of this fish is for local consumption. No registry of numbers was available. An inshore fisheries management programme is in place.

i. Warships

US, Taiwan, French, New Zealand and Australian military vessels have all visited Tuvalu in recent years – typically 3 visits per year. In 2016, a visit to Funafuti by the RNZN Navy Offshore Patrol Vessel HMNZS OTAGO was cancelled due to mechanical issues with one of the main engines; the subsequent reduction in manoeuvrability was considered to incur unacceptable risk for the safe navigation into and within the lagoon when combined with the age and quality of the current source data.

11. Responsibility for Safety of Navigation.

Responsibility for Safety of Navigation lies with the Director of Marine and Port Services at present, but reforms are underway to provide more structure.

AtN have been provided under various international aid programmes, most recently as part of the NZ Funded Ship to Shore Project which involved the overhaul or replacement of 37 AtN in 7 islands (9 new beacons in Funafuti alone). Unfortunately, the critical action of communicating the changes to AtN occurring as a result of this substantial project was not taken and it was some two and a half years before details for chart BA2983 were submitted to the UKHO via Hydrographic Note as a result of a PRNI visit in May 2016. Action to report changes to AtN in the outer islands has not been taken, although it is acknowledged this would not result in any charting action due to the small scale of affected charts. Nonetheless, work continues as part of MSI capacity building activities (PRNI and IHO TAV) to emphasise the importance of communicating the changes to AtN and other chart detail to the UKHO.

Very limited capacity exists within the Department of Marine and Ports to maintain AtN. Recent issues with the structural integrity of the beacons installed as part of the Ship to Shore Project, including the failure (i.e. broke off above seafloor) of one beacons and the instability of another has resulted in NZ MFAT to commission a series of inspections and subsequent commitment to undertake remedial works, planned for early 2017.

12. Defence Force Responsibilities.

Patrol Craft (police) is the maritime defence force and SAR provider. They are unarmed, apart for side arms. RAN have an advisor *in situ*. The patrol vessel and base are relying on use of a bespoke fisheries chart produced by the UKHO in the 1980s. The only copies of this paper chart are so well used that they have holes where all the islands are where for decades they have plotted ranges etc. They also have very limited copies of current paper charts, but no update scheme in place. A strong requirement for improved scales and schemes was expressed, based on improved data wherever possible.

13. Coastal Zone Management and Environmental Protection.

MPAs

Conservation areas are in place around all outer islands. Covered under the marine resources act. One is within Funafuti, but not shown on chart.

Sea Level Monitoring

There is one permanent sea level monitoring gauge located at the main wharf in Funafuti. Operated as part of the Pacific Sea Level Monitoring Project (PSLM), part of the Climate and Oceans Support Program in the Pacific (COSPPac). It is a continuation of the 20-year South Pacific Sea Level and Climate Monitoring Project (SPSLCMP) that has similar gauges in 14 other pacific island countries. See http://www.bom.gov.au/pacific/projects/pslm/index.shtml

The primary purpose of the sea level gauge is to generate an accurate record of variance in long-term sea level. To achieve this, the gauge is referenced to a Continuous Operating Reference Station (CORS) to allow absolute determination of the vertical height. Precise levelling is undertaken at 18 month intervals to isolate relative movement of the deep seated benchmarks (around 6 in total in Funafuti) and sea level data.

High quality sea level data has been recorded in Funafuti since the sea level gauge was installed in 1993. Data has been used to generate accurate predictions that are made publically available (free) in the form of annual Tide Tables produced by the Australian Bureau of Meteorology (BoM) and lately, SPC. These tide tables are widely used by mariners, planners and local fishing community. They are in terms of Chart Datum but carry a disclaimer and note advising they are not to be used for navigation.

It was noted that the corresponding entry in the Admiralty Tide Tables (ATT) for Funafuti is significantly different to the predictions published in the BoM tide tables. The datum of the PSLM tide gauge and subsequent BoM predictions, is understood to be Chart Datum as determined in 1983 for HI 121, on which the existing chart of Funafuti (BA 2983) is based. LAT has since been derived to be approximately 0.8m higher than CD, which is what the ATT predictions for Funafuti appear to be based on. The “Tidal Levels referred to Datum of Soundings” table on BA2983 also appear to be referenced to the “new” CD; however, from inspection of the HI 121 source data (obtained from LINZ), the depths currently shown on BA 2983 are definitely referenced to the 1983 Chart Datum. This means that official tidal predictions from the ATT applied to depths shown on BA 2983 will result in reduced depths that are approximately 0.8m

deeper than what is actually available. This anomaly has been reported by Hydrographic Note to the PCA (UKHO).

It is understood that due to wharf developments, the tide gauge will be moved to a new location mid-2017. SPC, through the PRNI and as implementing partners of the COSPPac programme, are working with the (BoM) to ensure details of the datum adopted (if changed) after the gauge relocation along with historic data is made available to the UKHO to enable the updating of ATT for Tuvalu.

No anchor zones

There are no no-anchor zones, but a number of designated anchorages depicted on the chart, most located due west of the old government wharf. With the construction of the main wharf, the majority of larger vessels anchor approx. 1 mile to the north. This information will be passed to the PCA.

Other

No other features relevant to safety of navigation were reported or found.

14. Status of surveys within the National Maritime Zone.

Almost the entire offshore area of Tuvalu is un-surveyed, with most charted data taken from passage soundings. The only area where some systematic surveys are currently charted are in the east side of the Funafuti lagoon. The most modern data charted is currently RNZN Navy surveys from 1985. However, the data discovery component of the PRNI has recently highlighted the availability of MBES sonar data from 2004 around all of the islands – but typically only from deeper than 50m. Work is now underway with Marine and Port Services Department, SPC and UKHO to ensure this data can be used for charting.

Data does not currently support most uses within Tuvaluan waters. The assessment team recommend that all stakeholders should investigate any route to enable the collection of modern hydrographic data, as well as undertake a data discovery exercise to identify any data holding which may contribute to improved charting, and safety of navigation and efficient access. Any data should be shared with the UKHO as Tuvalu's Primary Charting Authority.

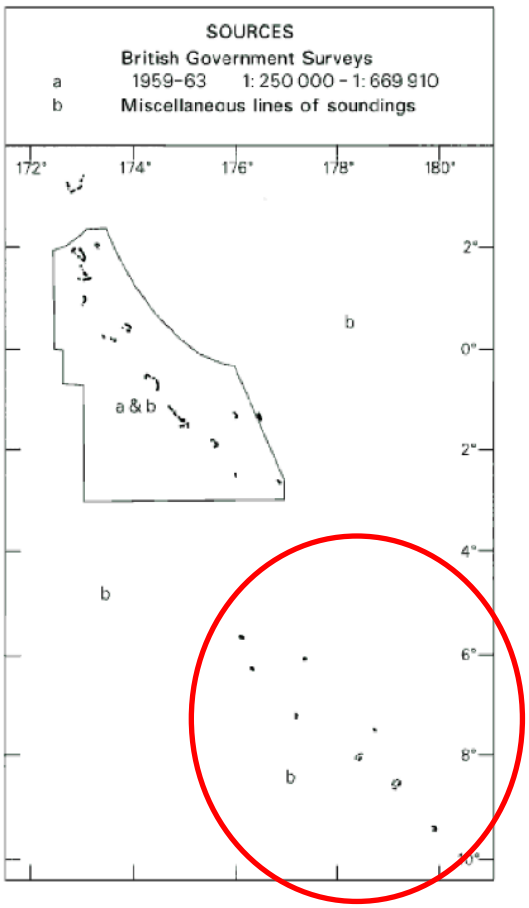

Figure 6 – Source Data Diagram BA Chart 4625 – Tuvalu Circled in Red

15. Collection and Circulation of Nautical Information.

As described elsewhere in this report, the collection and dissemination of nautical information at the national level, is currently almost non-existent. There has been limited contact between the PCA and GoT in past years, but little concerning information to improve nautical charts and associated publications. Similarly, there has been little contact with the NAVAREA Coordinator for Tuvalu (LINZ).

For at least the decade prior to 2011, there is little evidence of any contact or assistance provided by various intergovernmental agencies or development partners (such as the UK or NZ) to improve charting or safety of navigation. Since then, maritime officials from Tuvalu have attended various capacity building training courses, such as the MSI module delivered under the IHO CB work plan and a number of workshops relevant to hydrographic governance and awareness. A representative from GoT has also attended the SWPHC Meetings as an associate member in 2015. Despite these various forms of assistance, only minimal improvement in communications between the GoT and PCA has occurred resulting in no actual improvements in nautical information or charting.

Recently, however, there has been some evidence of improvements as a result of the cumulative efforts in the past 6 years and the significant increase in assistance in 2016 towards making improvements in overall Safety of Navigation. The NZ funded PRNI and Pacific Maritime Safety Projects have delivered hydrographic awareness and safety improvement advice respectively, the latter including an in-country deployment

of Technical Assistance (TA) specialists to undertake an institutional and legislative review of the GoT Maritime responsibilities, including those relating to hydrography under SOLAS Chapter 5. SPC has also contributed in this area, notably assistance to Tuvalu in preparing for the mandatory IMSAS audits. Tuvalu maritime officials were also involved in the compilation of the first Hydrographic Notes to be submitted for Tuvalu in many years.

Notwithstanding the improvements, albeit small, made in 2016, much work remains before Tuvalu can attest to have a functional MSI capability underpinned by sound hydrographic governance. The momentum gained in 2016 must be maintained and it is anticipated the recommendations from this TAV, implemented with assistance from the PRNI and UKHO as PCA, will achieve this.

A recommendation of the assessment team is that Director of Marine and Port Services should formalise the role of an MSI coordinator to fulfil Tuvalu's treaty obligations under SOLAS V/4 – Navigational Warnings. Based on the evidence identified, this should be resourced at a level of at least 1-2 days per month for ongoing tasks, plus appropriate time for urgent action arising. Following discussions, an ideal role to take on this activity would be the shore based off-watch masters of the Nivaga III alternatively, one of the professional maritime crew of the Police Maritime Wing, such as the Police Boat Navigator.

Director of Marine and Port Services should request to the SWPHC that the MSI Coordinator(s) is nominated and able to attend future appropriate MSI Courses established in the region by IHO and Member States.

To ensure the longevity of such a role, a further recommendation is that Government of Tuvalu should formalise national legislation to ensure SOLAS obligations are delegated to appropriate departments in line with recommendations likely to be made by the NZ MFAT Technical Assistance Team.

16. Survey Capability.

There is currently no hydrographic surveying capability within Tuvalu. It is unlikely that Tuvalu will be able to support such a capability in the immediate future. AtN maintenance personnel can check positions of lights, leads, sectors etc. There is a small amount of programmed maintenance for AtN, but most is reactive.

The Lands and Surveys Division have a clear remit to undertake marine mapping (charting rather than surveying) work, but are not equipped or able to undertake marine surveys directly. They currently work with other agencies to obtain data for needs such as UNCLOS boundary claims. They stated that much of this work is hampered by both the lack of available data and the scale of the BA charts of the area.

Lands and Survey Department stated that they hold geographical data for features such as the current MPA, future planned MPAs, maritime boundaries, coastlines, reef boundaries, structures etc. They are currently undertaking a project, with support from SPC, to convert all of the old island grids to WGS 84, as well as deploying tide gauges to establish new vertical datums. FM stated that he should be able to make all of this data available to the UKHO as PCA.

They stated a strong interest in having maritime boundary information shown on charts, as this informs activity offshore (such as fisheries enforcement). They also stated that the current chart scheming does not cater for their needs.

17. Independent Chart Production Capability.

Lands and Survey Department have some capability to produce GIS based maps to a reasonable quality. These are primarily created to support maritime boundary claims.

SPC, based in Fiji, also have capacity to produce non-official maps, charts and diagrams within the maritime domain.

The United Kingdom Hydrographic Office currently maintain a small series of British Admiralty Charts for Tuvaluan waters, and are considered by all relevant parties (in Tuvalu, UK and with IHO) as the Primary Charting Authority for Tuvalu. Details are provided in section 21.

18. National Hydrographic Committee.

No National Hydrographic Committee (NHC) exists in Tuvalu, although it is understood the NZ MFAT led maritime Institutional and Legislative Review will provide the necessary powers for the relevant officials (assumed to be the Minister of Communications and Transport) to officially create and empower such a committee. The assessment team recommended one be created, even if in a temporary unofficial capacity, and meet at least every 6 months, and record all decisions - if nothing else to coordinate and prioritise in case of outside survey assistance were made available. This NHC could ensure MSI promulgation remained on track. Benefits were also discussed in terms of IMO audits (planned for 2019).

The assessment team recommend that Minister of Communications and Transport should establish a National Hydrographic Committee or similar forum that coordinates national hydrographic requirements. This committee can work across stakeholder interests to establish priority areas for surveys and charting improvements. In this way, when funding is identified, priorities will already be agreed, and if improvements are to be made to chart schemes, a local consensus can already have been reached as to the action required. This group should include representatives from all stakeholder sectors, including but not be limited to: shipping, environmental protection, survey and mapping, national infrastructure development, coastal zone management, marine exploration, resource exploitation – minerals, fishing, maritime boundary delimitation, maritime transport, maritime defence and security, disaster management and tourism.

19. Phase 1 Hydrographic Capability: MSI Organisation and GMDSS.

a. <u>General MSI (Navigational Warnings).</u>

   As mentioned elsewhere in this report, there is no formal or even informal organisation set up to collate and disseminate MSI. The Director Ports and Marine, Mr Taasi Pitoi is recognised as the MSI coordinator by the NAVAREA Coordinator (LINZ), but it is understood that very little, if any, communication between LINZ and GoT has taken place in recent years apart from those relating

to administrative arrangements for Tuvalu maritime officials attending MSI courses.

Notwithstanding the absence of a NHC or recognised MSI organisation, limited weather forecast and weather warning information is occasionally broadcast via the local AM radio station in Funafuti. Apart from this, there are no broadcasts or listening watch kept on internationally recognised radio frequencies (HF or VHF).

b. Hydrographic Notes.

There has been minimal collation and submission of charted discrepancies via Hydrographic Note, almost all by external parties (visiting naval vessels or Technical Assessment Visits). It was noted during the TAV there was very few copies of the current nautical chart of Funafuti (BA2983) and in all instances, it was evident they had not been corrected for NtM, even those sighted on board the Nivaga III. No copies of authoritative tide tables (ATT) were seen. It was also reported to the TAV that access to a PC in order to compile and submit H notes was difficult due to limited availability of such resources.

- **Proposed Improvement:**

  Provision of a "MSI Resource Pack" containing the relevant tools to assist with the research, data acquisition, compilation and communication of MSI along with appropriate training in their use. Such tools would include a simple handheld GNSS receiver to facilitate positioning of features and a basic stand-alone laptop installed with open source chart reader software would assist in the research and compilation of pre-loaded H note templates. Communication of completed H notes could then be achieved via a dedicated MSI email account prepopulated with appropriate contacts and template messages. Such resources could potentially be supplied by the PCA, a relevant development programme or SPC.

c. List of Lights / Tide Tables.

The Admiralty List of Lights (Volume K – NP83) is the only official publication detailing the aids to navigation within Tuvalu waters; however, as previously stated in this report, information regarding the changes to AtN have not been communicated to the UKHO for many years, and NP83 bears little resemblance to what actually exists in Tuvalu. A recent H note has provided updated details for the AtN in Funafuti; however, information of the other AtN established in the outer islands has yet to be provided by the Tuvalu maritime authorities. Likewise, the ATT entry for Funafuti is likely to be based on out-of-date data, although this has not been confirmed.

d. GMDSS Status.

Tuvalu falls within NAVAREA XIV. NZ (LINZ) is the NAVAREA coordinator and broadcasts navigation warnings via SafetyNET for Tuvalu – when provided with the relevant and timely warning information. Tuvalu has not, and unlikely to ever implement GMDSS, the current status of which is summarised at Table 1.

Table 1: Summary of Progress towards Implementation of GMDSS.

Master Plan	A1 Area	A2 Area	A3 Area	NAVTEX	SafetyNET	Notes
No	No	No	No	No	No	

20. Phase 2 Hydrographic Capability: Survey.

a. Provision of Survey Data.

SPC advised that their Geosciences Team collected mutlibeam sonar data in 2004 around most of the islands in Tuvalu, as well as some limited data within the lagoons. The data is not expected to be of high hydrographic quality, but could make a significant difference for charting, and also augment other data collection activities, such as satellite derived bathymetry. An output of the PRNI project is making such data discoverable and facilitating its release to PCA's through official agreements. SPC have recently supplied a release agreement to Taasi Pitoi, Director of Marine and Ports Department. He hopes this will be signed very soon to allow to the data to be released to UKHO.

DP and DM met Faatasi Malologa (FM), Director of Lands and Survey Division. The Lands and Surveys Division already have a clear remit to undertake marine mapping work, but are not equipped or able to undertake marine surveys directly. They have worked with other agencies to obtain data for needs such as UNCLOS boundary claims. FM stated that much of this work has been hampered by both the lack of available data and the scale of the BA charts of the area.

FM stated that they hold geographical data for features such as the current MPA, future planned MPAs, maritime boundaries, coastlines, reef boundaries, structures etc. They are currently undertaking a project, with support from SPC, to convert all of the old island grids to WGS 84, as well as deploying tide gauges to establish new vertical datums. FM stated that he should be able to make all of this data available to the UKHO as PCA. This geodetic work is currently lacking funding.

b. Survey Capability.

There is no current capability within Tuvalu to collect hydrographic and bathymetric data, although the Lands and Surveys Department can reliably collect data such as shorelines, jetties etc, as well as establish survey control. The Assessment team do not think it is likely that Tuvalu will be able to develop or maintain a hydrographic surveying capability, even with outside assistance. Therefore, the most pragmatic way to collect data will be with external organisations working in and with Tuvalu.

21. Phase 3 Hydrographic Capability: Chart Production.

The Lands and Surveys Division already have a clear remit to undertake marine mapping (drawings) activity, but are not equipped or able to undertake marine surveys, nor produce hydrographic products focused on safety of navigation. They have worked with other agencies to obtain data for needs such as UNCLOS boundary claims. The

Lands and Surveys Division stated that much of this work has been hampered by both the lack of available data and the scale of the BA charts of the area.

The Lands and Surveys Division stated that they hold geographical data for features such as the current MPA, future planned MPAs, maritime boundaries, coastlines, reef boundaries, structures etc. With support from SPC they are currently undertaking a project to convert all of the old island grids to WGS 84, as well as deploying tide gauges to establish new vertical datums, although this geodetic work is currently lacking funding. The Lands and Surveys Division stated that he should be able to make all of this data available to the PCA.

The United Kingdom Hydrographic Office currently maintain a small series of British Admiralty Charts for Tuvaluan waters, and are considered by all relevant parties (in Tuvalu, UK and with IHO) as the Primary Charting Authority for Tuvalu. UKHO produce and maintain 3 charts for the waters of Tuvalu:

- 2983 - 1:50,000 [Approach] Funafuti Atoll and chartlets (1:15,000) of
    - Fongafale Anchorage,
    - Te Ava Fuagea,
    - Te Ava I Te Lape,
    - Te Ava Pua Pua
- 4632 - 1:1,500,000 [General] Fiji to Tuvalu
- 4625 - 1:1,500,000 [General] Tuvalu to Butaritari

Tuvalu Ministry of Communications and Transport expressed their concern to UKHO, in March 2015, over the lack of large scale charting across the islands, as UKHO had withdrawn BA766 as a result of poor source data. UKHO highlighted the lack of modern survey data and their willingness to assist in assessing the technical requirements for suitable charting across the area.

No official Electronic Navigational Charts (ENCs) exist for Tuvalu.

As stated in Section 20, some hydrographic survey data has already been collected in Tuvalu's waters, but has not been passed to the PCA. The assessment team recommend that any relevant hydrographic data should be shared with the UKHO as Tuvalu's Primary Charting Authority.

Current official charts are inadequate for many users in Tuvaluan waters, and particularly for the outer islands, does not enable safe and efficient navigation. The assessment team recommend that UKHO should work with local stakeholders to improve current charts and schemes. Improvements, however, are obviously dependent upon the supply of hydrographic data.

22. Summary of Capability

Table 2 presents the summary of the assessment of the National Hydrographic Capability

Table 2: Assessment of National Hydrographic Capability.

IHO Member	RHC (SWP)	NHC	Phase 1 Capacity	Phase 2 Capacity	Phase 3 Capacity	Notes
No	Observer	No	Partial	No	No	

Proposals for Assistance

23. Training.

For the size of the Department of Ports and Marine, a significant portion of staff have received formalised training on MSI with 3 maritime officers attending MSI courses in NZ and a senior official attending two workshops on hydrographic governance (Cook Is, 2015 and New Caledonia, 2016) and a week-long introductory course on hydrography (Fiji, 2012). As mentioned previously in this report, despite the training invested, little progress achieving Phase 1 – MSI Capability has been made.

MSI Training.

From observations made during the PRNI and IHO visits, it would appear that the recipients of previous MSI training may not hold appropriate positions within the ports and maritime department to be able to effectively discharge their responsibilities. This might be due to insufficient time to allocate to the task, such as the case for the Director, Ports and Maritime, or irregular access to appropriate resources (e.g. admin computer) reported by the maritime officers. Accordingly, it is recommended that future MSI training is targeted at those meeting the following criteria:

a. Can provide minimum 1 day/month to dedicated MSI activities for a minimum period of 2 years on completion of MSI training;

b. Will be delegated authority to perform role of national MSI coordinator by recognised national hydrographic focal point in lieu of NHCC (for Tuvalu, focal point is Director, Ports and Maritime Department, Mr Taasi Pitoi);

c. Have full access to word processing (computer) resources and reliable, autonomous (i.e. official, not personal) email communication with NAVAREA XIV coordinator;

d. Has geospatial experience, either as a maritime professional, surveyor, navigation specialist (Navy/Police Maritime Wing)

Aids to Navigation.

It is clear that little or no maintenance is being carried out on AtN equipment anywhere in Tuvalu with the exception of Funafuti Lagoon where minimal work is undertaken on an ad-hoc basis. Advice from officials is this is due mainly to a lack of funding to carry out the works and to a lesser extent, inadequate training on basic beacon replacement and even surface preservation. To address these matters and develop options for wider AtN management improvement, it is recommended that Tuvalu officials submit a formal request for an IALA TAV. SPC is the implementing agency for the IALA/IFRAN funded Safety of Navigation Project which seeks AtN improvement outcomes; the Senior Advisor for the project in SPC EDD has been made aware of the situation in Tuvalu and will be making a formal request to undertake a AtN TAV mid-2017, which will be conducted in close collaboration with the SPC PRNI.

24. Equipment.

Tuvalu does not have any hydrographic equipment, but does have some limited land survey equipment. Tuvalu does not have any national capacity to conduct surveys in their waters. Any survey activity will have to be undertaken by an external organisation in the near future.

25. Funding.

All relevant stakeholders were made aware of, and supplied digital copies of M-2. They were also made aware of capacity building and other opportunities within the IHO, and informed them that IHO membership could allow them to access to a range of activities. Information on the calculation of membership fees was also provided to assist with their cost/benefit analysis.

The Pacific Maritime Safety Project (New Zealand) MSP is already funding the provision of guidance on governance.

The UKHO may also be able to assist with survey activity in the near future, using direct funding or through the Commonwealth Marine Economies Programme.

Follow-up Actions

26. Encouragement of NHC, Hydrographic Strategy, and RHC Membership

The formation of a NHCC has strong support from the Department of Ports and Maritime; however, progress toward this goal (and subsequent formal establishment of a MSI co-ordinator) relies on formal governance arrangements that have yet to be implemented. The NZ MFAT led maritime Institutional and Legislative Review is anticipated to provide the framework and actions required to empower the relevant officials (assumed to be the Minister of Communications and Transport) to create and empower such a committee. At this time it is believed there is sufficient awareness within government of the need for NHCC; however, the current momentum will be monitored through regular PRNI visits and if observed to lapse, consideration will be given to requesting high-level encouragement from the IHO.

The Tuvalu Government was represented at the recent (November 2016) SWPHC Meeting as an observer and expressed a strong desire to become an Associate Member of the Commission. This will allow increased access to capacity building, but will still not incur membership costs. SPC in collaboration with the UKHO will assist Tuvalu through this process if required. No high level encouragement is required.

27. Encouragement of Promulgation of Hydrographic Information

a. Hydrographic Notes.

As mentioned frequently throughout this Report, the significant resources in terms of MSI training invested in Tuvalu has not seen corresponding improvements in the effective and timely collection and promulgation of hydrographic information. Whilst there are recommended actions involving provision of resources to make this easier (MSI Resource Pack), it is felt that further encouragement towards meeting this fundamental aspect of MSI is required. Accordingly, it is recommended that:

- The Secretary General write to the Prime Minister of Tuvalu encouraging the effective and timely collection and promulgation of hydrographic information.

b. Urgent Hydrographic Notes for action by TAV Team.

A Hydrographic Note describing the discrepancies relating to the datum used for official tidal predictions compared with datum on which BA2983 is based has been created and passed to the UKHO as the PCA.

28. Encouragement of Development of Hydrographic Capability

a. Options for provision of consultative support including temporary secondments.

It is the view of the assessment team that Tuvalu will not be able to develop a surveying capability in the near future, and that surveying assistance should be provided in the form of external organisations undertaking packages of work in coordination with local authorities.

b. Options for transfer or loan of equipment.

See above.

c. Recommendations for follow-up technical assistance in development of a National Indicative Plan for training funding.

Training support and mentoring should be focussed on the provision of basic MSI data to appropriate bodies.

Conclusions

29. General Conclusions.

All required objectives for the visit have been met, including technical assessment, needs assessment, data discovery and relationship development.

Data does not currently support most uses within Tuvaluan waters. Many examples were provided, ranging from safety of navigation, marine infrastructure development, climate change adaptation, fisheries management and environmental protection.

GoT has the capability to generate MSI for external promulgation within its waters, but this is not currently being done effectively.

Current official charts are inadequate for many users in Tuvaluan waters. This view was expressed by the Ministry of Transport, Marine and Ports Department, RAN, Tuvalu Police, Climate Change Policy and Disaster Coordination Department and vessel masters engaged. As a minimum, a chart covering the Tuvaluan Islands EEZ (only) is required. This information has been passed to the PCA. Data available from SPC may be able to enable improved medium scale charts of the islands to be produced.

Formation of a NHC should help ensure proper structures are in place regarding MSI, hydrographic and charting priorities are agreed and understood, and the benefits of any data obtained or collected in the future can be fully realised.

30. Co-operative Opportunities.

It is unlikely that Tuvalu will be able to develop a hydrographic survey capability in the near future, and therefore any data collection activity should be targeted through external bodies such as SPC and the relevant PCA.

The importance and benefits of the supply of basic MSI to relevant bodies was stated on multiple occasions by the visit team. This should be re-enforced at the IHO level to ensure lines of communication are clear.

No request was made to supply this report to any local organisation.

31. National Hydrographic Committees (NHCs).

The assessment team recommended that a NHC be created, even if in an unofficial capacity and meet at least every 6 months, and record all decisions to coordinate and prioritise in case of outside survey assistance were made available. This NHC could also ensure MSI promulgation remained on track. Benefits were also discussed in terms of IMO audits (planned for 2019).

Recommendations

32. Recommended Actions.

a. Director of Marine and Port Services should formalise the role of an MSI coordinator to fulfil Tuvalu's treaty obligations under SOLAS V/4 – Navigational Warnings. Based on the evidence identified, this should be resourced at a level of at least 1-2 days per month for ongoing tasks, plus appropriate time for urgent action arising. [Section 15]

b. An ideal role to take the MSI Coordinator activity would be the shore based off-watch master(s) of the Nivaga III or alternatively, one of the professional maritime crew of the Police Maritime Wing, such as the Police Boat Navigator. [Section 15]

c. Director of Marine and Port Services should request to the SWPHC that the MSI Coordinator(s) is nominated and able to attend future appropriate MSI Courses established in the region by IHO and Member States. [Section 15]

d. Government of Tuvalu should formalise national legislation to ensure SOLAS obligations are delegated to appropriate departments in line with recommendations likely to be made by the NZ MFAT Technical Assistance Team. [Section 15]

e. Minister of Communications and Transport (or official empowered to do so) should establish a National Hydrographic Committee or similar forum that coordinates national hydrographic requirements. [Section 18]

f. All stakeholders should investigate any route to enable the collection of modern hydrographic data. [Section 14]

g. Director of Marine and Port Services, in collaboration with the Director, Lands and Survey Division, should instigate a data discovery exercise to identify any data holding which may contribute to improved charting, and safety of navigation and efficient access. [Section 14]

h. Any relevant hydrographic data should be shared with the UKHO as Tuvalu's Primary Charting Authority. [Section 21]

i. UKHO should work with local stakeholders to improve current charts and schemes. [Section 21]

j. UK or SPC (TBC) to supply an "MSI Resource Pack" to Government of Tuvalu. [Section 19]

33. RHC Follow-up Actions.

This section details how the RHC and its members, associates, observers and partners can support the hydrographic development of Tuvalu.

a. Encouragement of NHCs through a Regional Plan.

Through either the CB seminars or the opportunity to present a country report during RHC plenary sessions, the RHC should support the development of Tuvalu's NHC by helping to identify blockers or dependencies, and assisting with finding appropriate solutions.

b. Funding.

The SWPHC CB plan should continue to provide financial support for Tuvalu to attend the seminars and commission meetings, until such time as they have developed their hydrographic governance sufficiently to be able to do this themselves.

c. Regional and Bilateral Training.

Tuvalu would benefit from hydrographic governance training but this would be far more effective in the form of in country technical assistance. A technical implementation visit could help in this regard, but would need a minimum of two weeks in country with a delegation of at least two appropriately qualified experts.

34. Preparations for Next RHC Conference.

As the next SWPHC was within weeks of the technical assessment visit, and the report would not be available prior to the RHC, the assessment team did not feel is was appropriate to make recommendations for the RHC at this stage. Longer term, the assessment team recommended that forming a NHC and ensuring MSI promulgation should be reported to the RHC, as well as request for ongoing assistance in the collection of survey data and improvements to current charting.

David Parker, UKHO Hydrographic Development Advisor.
Technical Visit Team Leader

Dave Mundy (DM) – Senior Hydrographic Surveyor, Pacific Community (attending in a partnering role to UKHO / IHO under the NZ MFAT PRNI Project).

Annexes:

A. Contacts
B. Journal of Events
C. IHO Yearbook Update

Distribution: Chair RHC, IHO Secretariat

35. Annex A – Contacts

Name	Title	Email Address (if provided)	Attended Workshop
Maritime and Ports			
Taasi Pitoi	Director of Marine	taasi.pitoi@gmail.com	Yes
Nito Lipine	Master of Nivaga III	nlteiaputi@gmail.com	
Leupena Paueli	Master of Nivaga III		
Minister Monise Laafai	Minister of Communications and Transport		
Falesa	Tuvalu Meteorological Service		Yes
Police Maritime Wing			
Talafou Esekia	Maritime Commander / SAR Rep	talaloi@yahoo.com.au	
Maritime Surveillance			
LTCDR Ashely Goode RAN	Maritime Surveillance Advisor	tuvalumsa@yahoo.com.au	Yes
Fisheries			
Dr Ursula Kaly	Tuvalu Inshore Fisheries Adviser	uschik@tuvalufisheries.tv	Yes
Spatial Data Infrastructure			
Faatasi Malologa	Director of Lands and Survey Division	fmalologa@gmail.com	Yes
Climate Change			
Loloma Homasi	Climate Change Policy Coordinator	mrshomasi@gmail.com	Yes
Kate Morioka	Technical Adviser	kate.morioka@gmail.com	
Maritime Legislation			
Mr Jeremy Brown	MCT Technical Adviser	jeremy.jbanda@gmail.com	Yes
Mr Graham Powell	Legal Adviser	jcoard@alphalink.com.au	Yes
Gaylene Mcfarlane	NZ Police Advisor		Yes

36. Annex B – Meetings Journal

Date	Time	Activity	Notes
	1200	Arrive Funafuti	1. Move into accommodation - VLH
	1300	Meet with LTCDR Ashley Goode RAN	1. Discussed logistics for TAV
	PM	Meeting preparation	1. Development of presentations
Sunday 6 November	AM/PM	Meeting preparation	1. Development of presentations
Monday 7 November	0830	Meet with Ms Mati Afeele, MFAT Development Coordinator	1. NZ MFAT Development Office, Funafuti 2. Discussed TAV programme / review list of stakeholders for TAV/CME
	0930	Maritime Stakeholder Group Meeting	1. National Coordinator Centre (NCC) 2. TAV and CME Presentations delivered by TAV Team, followed by stakeholder discussion 3. List of attendees – refer to Table XXX
	1430	Tour of Funafuti Wharf	1. Accompanied by Director, Ports and Marine 2. View PSLM Tide gauge
	1445	Visit MV Nivaga III	1. At anchor, Funafuti
Tuesday 8 November	1000	Meeting with Taasi Pitoi, Director Ports and Marine	1. Data gathering for TAV Report 2. Discussion on Hydrographic/MSI improvements 3. Discussion on TU aspirations for IHO full membership 4. Also attended by PMSP TA Team
	1030	Meeting with Hon Minister Monise Laafai, Minister of Communications and Transport	1. Brief on TAV objectives, including PRNI and CME 2. Accompanied by Director, Ports and Maritime
	1100	MSI Training	1. Attended by Nito Lipene and Leupena Paueli (FG Mate/Master) 2. Compilation of H Note 3. Discussion on potential options for improvement of MSI
	1530	Meeting with NZ MFAT Technical Assistance Team	1. Mr Jeremy Brown and Mr Graham Powell 2. Tasked with Institutional and Legislative Review of TU Maritime

Date	Time	Activity	Notes
			3. Productive discussions on options to implement hydrographic governance in TU
Wednesday 9 November	1030	Meet with Faatasi Malologa, Director Lands and Survey	1. Discussion of chart user requirements for MB and cadastral uses. 2. Discussed PGSC and potential assistance from CME
	1230	Meet with Permanent Secretary, Mr Temate Melitiana, Ministry of Foreign Affairs, Trades, Tourism, Environment & Labour	1. Brief on TAV objectives, including CME and PRNI 2. Discussion on SPC/GoT Data Release Agreement – obtained verbal agreement for release of data to PCA (UKHO) for charting purposes
	1300	Meet with Climate Change Policy and Disaster Coordination Unit, Office of the Prime Minister	1. Office represented by Kate Morioka (TA) 2. Outline of CME and discussion on potential areas for assistance
	1530	Report Compilation	1. TAV report compilation
	1900	Dinner Reception	1. Hosted by GoT Ports and Marine 2. Attended by TAV team and NZ MFAT PMSP TA Team
	2100	UN and Tuvalu Prime Minister Reception	1. Hosted by UN 2. DP and DM briefly spoke with Tuvalu's Prime Minister, Enele Sopoaga.
Thursday 10 November	0930	Meet with LTCDR Ashley Goode RAN, Maritime Surveillance Advisor and Supt Talafou Esekia, Police Wing Maritime Commander	1. Discussed chart user requirements in support of maritime surveillance and SAR operations 2. Both very supportive of Police Wing and PPB involvement in MSI – data collection and promulgation 3. Very interested in Patrol Boat crew (Navigator) receiving MSI training
	1100	Depart Funafuti	1. FJ280

37. Annex C – IHO Yearbook Update for Tuvalu

IHO/OHI Yearbook/Annuaire/Anuario	
Country name / nom du pays	Tuvalu
Agency name / nom d'agence:	Department of Ports and Marine
Contact information/ Informations de contact / Información de contacto	
-National Hydrographer or equivalent -Directeur du service hydrographique ou équivalent -Director del Servicio Hidrográfico o equivalente	Post: Director, Ports and Marine Name: Captain Taasi Pitoi Postal address: C/- Government Building, Funafuti, Tuvalu Tel: 00-688-20054 Fax: Email: <taasi.pitoi@gmail.com>
-Head of the Hydrographic Office (if different from the person indicated above) -Directeur du Service Hydrographique (si différent de la personne indiquée ci-dessus) -Director del Servicio Hidrográfico (si diferente de la persona indicada anteriormente)	Post: None Name: Postal address: Tel: Fax: Email:
-Other point(s) of contact -Autre(s) point(s) de contact -Otros punto(s) de contacto	Not known.
-Web site -site web -sitio web	No website available.
Country information / Informations sur le pays/ Información sobre el país	

-Declared National Tonnage -Tonnage national déclaré -Tonelaje Nacional Declarado	Tonnage: Not known. Tuvalu does operate an international Registry but at time of TAV, officials could not provide tonnage details. Date:
-National day -Fête nationale -Fiesta nacional	October 1 (Tuvalu Day)
-Date of establishment and Relevant National Legislation -Date de mise en place et législation nationale pertinente -Fecha de constitución y legislación nacional pertinente	Not known.
-Date first joined IHO -Date d'adhésion à l'OHI -Fecha de adhesión a la OHI	Currently not a member.
-Date ratification Convention -Date de ratification de la Convention -Fecha de ratificación de la Convención	Currently not a member.
-Remarks on membership -Remarques sur l'adhésion -Comentarios sobre la adhesión	Currently not a member.
Agency information/ Information sur l'agence/ Información sobre la agencia	
-Top level parent organisation -Organisme mère -Organización asocieda de nivel superior	The Department of Ports and Maritime reports to the Minister of Communications and Transport.
-Principal functions of the organisation or the department -Attribution principales de l'organisme ou du département -Principales funciones de la Organización o departamento	The Department of Ports and Maritime has both regulatory (licensing, certification etc) and operational functions. It also operates government owned vessels and ports.
-Annual operating budget -Budget annuel -presupuesto annual	Not known.

-Total number of staff employed -Effectifs totaux -Número total de personal empleado	Not known.			
-Number of INT charts published -Nombres de cartes INT publiées -Número de cartas INT publicadas	Published by the UKHO as PCA for Tuvalu: - BA4632 - 1:1,500,000 [General] Fiji to Tuvalu - BA4625 - 1:1,500,000 [General] Tuvalu to Butaritari			
-Total number of paper charts published -Nombre total de cartes papier publiées -Número total de cartas de papel publicadas	in addtion to above: - BA2983 - 1:50,000 [Approach] Funafuti Atoll and chartlets			
-Number of ENC cells published -Nombres de cellules ENC publiées -Número de células ENC publicadas	None			
-Number of Other charts -Nombre d'Autres cartes -Número de Otras cartas	None			
-Type of publications produced -Type d'ouvrages produits -Tipo de publicaciones producidas	Offical Tide Tables (ATT) produced by UKHO as PAC for Tuvalu			
-Detail of surveying vessels/ aircraft -Détail des bâtiments hydrographiques / aéronefs -Detalle de los buques hidrográficos / aeronaves	-Name -Nom -Nombre	-Displacement -Déplacement - Desplazamiento	-Commissioning Date -Date de mise en service -Fecha de puesta en servicio	-Number of crew -Equipage -Tripulación