



PACIFIC ISLANDS APPLIED GEOSCIENCE COMMISSION

SPSLCMP IV Field Survey & RMBP Sub-regional Workshop Majuro, Republic of Marshall Islands 19th April to 15th May 2006

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Ocean & Islands Programme*

SOPAC Trip Report 410

SOUTH PACIFIC SEA LEVEL & CLIMATE MONITORING PROJECT PHASE IV

SUMMARY

The South Pacific Sea Level & Climate Monitoring Project commenced in Majuro, Republic of Marshall Islands in 1993. The project personnel from Geoscience Australia and the South Pacific Applied Geoscience Commission have successfully completed the ninth precise differential levelling survey of the deep benchmark array. The last field survey was done in February 2004. The levelling run was made from the SEAFRAME Station at the wharf to the last deep benchmark at the Capitol Building compound. Along the levelling run, connections were made to all the five deep benchmarks.



Mr Andrick Lal of SOPAC carries out the Precision Levelling Survey using Total station from the SEAFRAME Station at the Uliga Wharf Majuro, Republic of Marshall Islands.

The Precision Monitoring Levelling Survey Programme (with the two methods) was completed in fourteen (14) days. The geodetic survey programme was carried out successfully. All the deep benchmarks were found from the previous survey. The three and half kilometre of survey array with the two methods:

- Precise Differential Levelling Survey using Leica NA3003 Digital Level and Starves; and
 - Precision Levelling Survey using Leica TCA180 Total Station with Prism and Poles –
- were carried out in the Geodetic Survey Component 2 of the SPSLCMP.



Location of the fixed deep benchmark MAR2 in Majuro, RMI.

Both the survey methods achieved the standard of accuracy and precision as per first order geodetic levelling of within the limits of $2\sqrt{k}$.

The fixed deep benchmark MAR2 which as designated the Tide Gauge Bench Mark (TGBM) as it was the closest benchmark to the SEAFRAME gauge was not found. The construction of the new building nearby destroyed the survey mark. Strenuous effort was put in to locate the fixed deep benchmark but the survey team was unsuccessful. The ground around the mark was found to be excavated with the construction of the new fence line. Therefore deep benchmark MAR3 was designated as the fixed deep benchmark. Upon interview with the land occupants, the excavation took place in November 2005.

Introduction

The South Pacific Sea Level and Climate Monitoring Project of Phase IV aims to help the Pacific Island countries understand the implications and scale of sea level and climate changes. The duties of the “Project Officer – Surveying” in this project concentrates on the objectives stated below. But overall this project is established to: –

- a. Set up high-resolution monitoring stations in the South Pacific region to compute relative motions of land and sea at each station based in each of the twelve countries.
- b. Carry out a geodetic survey programme (Precision Levelling Monitoring Surveys) to measure movements of the crust at the other strategic sites in each country with respect to the reference station under the coordination of Geoscience Australia.
- c. Help identify changes to sea levels with reference to a similar network of stations in Australia and elsewhere in the world, whether these changes are due to thermal expansion of the ocean, contributions from the land ice or changing properties of water from different ocean zones.
- d. Provide a measure of regional vertical controls and exchange information and data with national, regional and international climate change centres in relation to the ongoing international geodetic programmes, which incorporate satellite altimetry and radio astronomy.

Objective

1. To collect and reduce the precise differential levelling survey data using the Digital Level and Starves adopting to the traditional geodetic method of levelling between the Sea Level recorders, benchmark arrays and CGPS receiver in the field as part of the South Pacific Sea Level and Climate Phase IV Project funded by AusAID. The previous Precise Differential Levelling Survey was carried out in May 2004.
2. To monitor and identify changes to sea levels in the South Pacific that is due to thermal expansion of the ocean, glaciations from the land ice or changing properties in the continental plates between zones.
3. To assist Mr Steve Yates of Geoscience Australia carry out the Precision Levelling Survey and the CGPS Monitoring Survey as part of the geodetic levelling survey component using the Total Station and the Prism Pole.

Field Survey Schedule

As per field survey schedule the survey team arrived in Majuro on the 21st of April and the precision levelling survey using the Digital Level (conventional) and the Total Station (digital) was completed in thirteen days. The field survey visit concluded on the 4th of May 2006. During the survey visit, the preferred CGPS Site was also selected and brief meetings with the Weather Office, Foreign Affairs and Public Works Department were also conducted.

The survey site is located along the main road of the Uliga Town in Majuro Atoll, which is the hub of the Republic of Marshall Islands

REGIONAL MARITIME BOUNDARIES PROJECT

SUMMARY

The full week of hands-on training on PIRMBIS allowed the participants to go through the whole process from collecting the data, registration of scanned maps, digitising and building the database, generating maritime boundaries, getting the boundaries back into the database, generating median lines, producing a map and looking at what is possible with extended continental shelf work. A surveying session also allowed the participants to collect ground truth data that would enable them to verify positions of low water marks on maps or satellite imagery. This workshop provided exposure to the participants to all the possible difficulties that may be encountered along the process and their solutions.

The workshop was to benefit the participating countries technical professionals to work towards the completion of their maritime boundaries.

This workshop was held in Majuro to allow more people from Palau, Federated States of Micronesia, Marshall Islands and Kiribati to receive the training. There were 13 participants from these countries. The workshop was held at the Marshall Islands University of South Pacific Centre in Majuro from 8th to 12th May 2006.

A very warm welcome and support was provided by the Government of the Marshall Islands during the workshop.



Participants at the PIRMBIS Technical Training Workshop held at the RMI USP Centre in Majuro from 8 to 12 May 2006.

Introduction

The 14 South Pacific member countries of SOPAC have 49 unresolved maritime delimitation boundaries and many other maritime zone limits yet to be clearly defined. Much of the current work being undertaken by SOPAC, on behalf of the South Pacific countries is to populate the maritime boundaries database called Pacific Islands Regional Maritime Boundaries Information System (PIRMBIS).

The development and implementation of the Pacific Islands Regional Maritime Boundaries Information System [PIRMBIS] was achieved through generous support from Geoscience Australia.

SOPAC has held three training technical workshops on PIRMBIS: –

- March 2004 for representatives from Fiji, Niue, Samoa and Tuvalu;
- October 2004 for representatives from Marshall Islands, Vanuatu, Solomon Islands, Papua New Guinea and Tonga; and
- April 2005 for representatives from Palau, Federated States of Micronesia, Cook Islands and Kiribati.

As part of the 2006 work programme, SOPAC has held a five (5)-day sub-regional technical training workshop for Federated States of Micronesia, Kiribati, Marshall Islands and Palau to effectively implement and utilise PIRMBIS and MarZone.

Objective

1. To facilitate technical training in the use of the maritime boundaries database (PIRMBIS) and the use of MarZone (the maritime boundaries delimitation software).
2. To provide the South Pacific island countries with sufficient knowledge to enable them to be able to generate their own maritime boundaries.
3. To build capacity in this area for the technical professionals so that they can work themselves to initiate maritime boundaries delimitation negotiations with the neighbouring countries.
4. To hold discussions between technical professionals from the invited countries and the consultants in relation to the various countries' datasets and to review and validate the maritime boundaries data and information held within PIRMBIS.

List of People involved/consulted

Field Survey Team and RMBP Workshop Resource Personnel

- Mr Steve Yates, GPS Networks Officer – National Geospatial Reference Systems Geospatial & Earth Monitoring Division (GEMD), Geoscience Australia.
- Mr Colin French, Maritime Boundaries Adviser – Marine Spatial Information & Boundary Advice Project, Geoscience Australia.
- Mrs Mary Power, Manager – Ocean & Islands Programme, SOPAC
- Ms Emily Artack, Maritime Boundaries Project Officer – Ocean & Islands Programme, SOPAC.
- Ms Frances Dobui, Programme Assistant – Ocean & Islands Programme, SOPAC.

Republic of Marshall Islands

- Mrs Viola Chonggum, Secretary – Ministry of Foreign Affairs
- Ms Kino Kabua, Under-Secretary for Asia Pacific – Ministry of Foreign Affairs
- Ms Keyoka Kabua, Foreign Service Officer – Ministry of Foreign Affairs
- Mr Glenn Joseph, Director – Marshall Islands Marine Resource Authority
- Mr Tregor Albon Ishoda, Policy Officer – Division of Policy & Planning, MIMRA, RMI.
- Mr Neil Nash, Officer-In-Charge – Royal Australian Navy.
- Mr Caleb McClennan, Consultant – Environment Protection Authority, RMI.
- Dr Irene Taafaki, Centre Director – USP Centre in Marshall Islands.
- Mr Dohsis Lokot, IT Technician – USP Centre in Marshall Islands.
- Mr Reginald White, Director – Weather Service Office, Majuro.
- Mr Wilfred Rada, Consultant Surveyor – Survey Department, Ministry of Internal Affairs.
- Mr Kneller William, Survey Assistant – Survey Department, Ministry of Internal Affairs.
- Rev. Father Richard McAuliff SJ – Assumption Church.
- Mr Smith Ysawa, Secretary – Public Works Department.

Sub-regional Maritime Boundaries Project Workshop

Federated States of Micronesia

- Mr Mathew Chigiyal, Manager, Licensing, Statistics & Computer – National Oceanic Resource Management Authority (NORMA), Pohnpei.
- Mr Scott Sweet, GIS Specialist – NORMA, Pohnpei.
- Mr Alfred Lebehn Jr., Computer Operator II – NORMA, Pohnpei.

Kiribati

- Mr Wayne Reiher, IT Specialist – Ministry Fisheries & Marine Resources Development.
- Mr Tiaontin Enari, Senior Cartographer – Land Management Division.

Palau

- Mrs Vernice Stefano, Program Manager – Office of PALARIS, Ministry of Resources & Development.
- Mr Galbraith Gabriel, GIS Technician – Office of PALARIS, Ministry of Resources & Development.
- Mr Michael Aulerio, Assistant GIS Analyst – Office of PALARIS Ministry of Resources & Development.

Republic of Marshall Islands

- Ms Berry Muller, Chief Fisheries Officer – Oceanic Division, Marshall Islands Marine Resources Authority (MIMRA).
- Mr Albon Ishoda, Policy Officer – Marshall Islands Marine Resources Authority.
- Mr Kneller T. William, Survey Technician – Ministry of Internal Affairs.
- Mr Rito Akilang, GIS Officer – Environmental Protection Authority.
- Mr Dike Poznanski, RMI Observer Supervisor – Marshall Islands Marine Resources Authority.

<i>Itinerary</i>		<i>Activity Name – South Pacific Sea Level & Climate Monitoring Project Phase III (O.I.P 2.2.1)</i>	<i>ACTION</i>
<i>Date</i>	<i>Time</i>		
19/04/06	1800	<ul style="list-style-type: none"> ▪ Checked in at the Nausori Airport. – Left Suva for Nadi. ▪ Stayed overnight at the Raffles Gateway. 	OIP/AL
20/04/06	0700 1140 1735 2240	<ul style="list-style-type: none"> ▪ Checked in at the Nadi Airport. – Left Nadi for Sydney. ▪ Arrived at the Sydney airport. ▪ Checked in at the Sydney domestic terminal. – Left Sydney for Cairns. ▪ Checked in at the Cairns International Airport. 	OIP/AL OIP/AL GA/SY
21/04/06	0030 0445 0620 1910 2000	<ul style="list-style-type: none"> ▪ Left Cairns for Guam. ▪ Arrived at the Guam International Airport. ▪ Checked in at the Guam Airport for Majuro, Republic of Marshall Islands (RMI). – Left Guam for Majuro, (RMI). ▪ Arrived at the Majuro International Airport. ▪ Checked into Robert Reimers Hotel. 	OIP/AL GA/SY
22/04/06	1000 1100 1300	<ul style="list-style-type: none"> ▪ Assembled all the survey gear (put together the starves and struts; prism poles and bi-poles; setting up survey gear). ▪ Purchased hand tools and can of spray paint for the field survey. ▪ Reconnaissance Survey: <ul style="list-style-type: none"> – Locate the fixed deep benchmark, MAR2 (This benchmark was not found after few hours of locating the ground mark on the ground; Evidence showed that the ground was disturbed by the excavation). 	OIP/AL GA/SY

<i>Itinerary</i>		<i>Activity Name – South Pacific Sea Level & Climate Monitoring Project Phase III (O.I.P 2.2.1)</i>	<i>ACTION</i>
<i>Date</i>	<i>Time</i>		
23/04/06	1030	<ul style="list-style-type: none"> Reconnaissance Survey: <ul style="list-style-type: none"> – Located all the deep benchmarks and temporary survey marks. 	OIP/AL GA/SY
24/04/06	0830 1400	<ul style="list-style-type: none"> Courtesy visits to the Survey Department; Weather Service Office; Foreign Affairs; Marshall Islands Marine Resources Authority (MIMRA); Royal Australian Navy; and Environment Protection Authority (EPA). Marking off the Survey Bays from the deep benchmark (MAR3) to the tide gauge station (MAR13) and to the Mobil Depot deep benchmark, MAR15 along the main road. 	OIP/AL GA/SY
25/04/06	0830 1730	<ul style="list-style-type: none"> Precision Levelling Surveys using Total Station with Prism and Poles from Bays from the deep benchmark (MAR3) to the tide gauge station (MAR13) and to the Mobil Depot deep benchmark MAR15 along the main road Digital Survey data closure check and accuracy standards using Survey Programme; Levelling.exe Approximately 1.1 kilometres of survey completed. 	OIP/AL GA/SY
26/04/06	0800 1700	<ul style="list-style-type: none"> Marking off the survey bays from deep benchmarks MAR15 to MAR51. Precision Levelling Surveys using Total Station with Prism and Poles from the deep benchmarks MAR15 to MAR51 in front of the Marshall Islands Energy Company. Approximately 1.2 kilometres of survey completed. Digital Survey data closure check and accuracy standards using Survey Programme; Levelling.exe 	OIP/AL GA/SY
27/04/06	0800 1400 1700	<ul style="list-style-type: none"> Marking off the survey bays from deep benchmarks MAR51 to MAR53 in the Capitol Building compound. Precision Levelling Surveys using Total Station with Prism and Poles from the deep benchmarks MAR51 to MAR53 – the last deep benchmark of the survey array. Approximately 700 metres of survey completed. Met with RMI USP Centre Director, Ms Irene Tafaaki, with regard to the use of the IT Lab for the Sub-regional Training Workshop. Digital Survey data closure check and accuracy standards using Survey Programme; Levelling.exe (Level run from the deep benchmarks MAR52 to MAR53 did not close within the acceptable limits of error). 	OIP/AL GA/SY
28/04/06	0800 1000 1100 1700	<ul style="list-style-type: none"> Precision Re-levelling Surveys using Total Station with Prism and Poles from deep benchmark MAR52 TO MAR53. Digital Survey data closure check and accuracy standards using Survey Programme; Levelling.exe Marking off the survey bays for the Precise Differential Levelling Surveys from the deep benchmark MAR3 to MAR54 along the main road into wharf road. Precise Differential Levelling Survey from deep benchmark MAR3 to the temporary benchmark MAR54. Reduction and closure check of the precise differential levelling survey data. Completed approximately half a kilometre of levelling survey. 	OIP/AL GA/SY

<i>Itinerary</i>		<i>Activity Name – South Pacific Sea Level & Climate Monitoring Project Phase III (O.I.P 2.2.1)</i>	<i>ACTION</i>
<i>Date</i>	<i>Time</i>		
29/04/06	0800 1300	<ul style="list-style-type: none"> Precise Differential Levelling Survey from the temporary benchmark MAR54 to the Tide Gauge Project Plaque (MAR13). Marking off the survey bays from temporary benchmark MAR54 to MAR26, outside the Mobil Station Depot along the main road of Majuro. Precise Differential Levelling Survey from temporary benchmark MAR54 to the MAR26. Reduction and closure check of the precise differential levelling survey data at the end of the day. Approximately eight hundred metres of levelling survey completed. 	OIP/AL GA/SY
30/04/06	0830	<ul style="list-style-type: none"> Precise Differential Re-Levelling Survey from temporary benchmark MAR58 to the MAR26. Marking off the survey bays from deep benchmarks MAR15 to MAR50, in front of the Assumption Church. Reduction and closure check of the precise differential levelling survey data at the end of the day. Approximately six hundred metres of levelling survey completed. 	OIP/AL GA/SY
01/05/06	0800 1730	<ul style="list-style-type: none"> Precise Differential Re-levelling Survey from temporary benchmarks MAR35 to MAR34. Marking off the survey bays for the Precise Differential Levelling Surveys from deep benchmark MAR50 to MAR51, in front of the Marshall Islands Energy Company. Precise Differential Levelling Survey from deep benchmark MAR50 to MAR51. Reduction and closure check of the precise differential levelling survey data. 	OIP/AL GA/SY
02/05/06	0830 0930 1030 1700	<ul style="list-style-type: none"> Marking off the survey bays for the Precise Differential Levelling Surveys from deep benchmarks MAR51 to MAR52, in front National Telecommunications Centre. Discussion meeting with Mr Reginald White on the selection of the CGPS Site. Precise Differential Levelling Survey from deep benchmark MAR51 to MAR52. Reduction and closure check of the precise differential levelling survey data (All the survey run closed within the acceptable limits of error). 	OIP/AL GA/SY
03/05/06	0830 1700 1830	<ul style="list-style-type: none"> Marking off the survey bays for the Precise Differential Levelling Surveys from deep benchmarks MAR52 to MAR53, in the capitol building compound. Precise Differential Levelling Survey from deep benchmarks MAR52 to MAR53. Reduction and closure check of the precise differential levelling survey data (All the survey runs using the Digital Level closed within the acceptable limits of error). Precise Differential Levelling survey data downloaded from the Leica NA3003. 	OIP/AL GA/SY

<i>Itinerary</i>		<i>Activity Name – South Pacific Sea Level & Climate Monitoring Project Phase III (O.I.P 2.2.1)</i>	<i>ACTION</i>
<i>Date</i>	<i>Time</i>		
04/05/06	0830 1400 1500	<ul style="list-style-type: none"> ▪ Took photographs and covered up all the deep benchmarks with dirt. ▪ Packed up all the survey gear. ▪ Freight off all the survey gear via Continental Airlines Cargo to FSM Weather Service Office. ▪ Met up with Mrs Viola Chonggum, Ms Kino Kabua and Keyoka Kabua regarding the workshop arrangement during the following week. ▪ Met up with Dr Irene Taafaki and Mr Dohsis Lokot for the workshop venue and arrangements to access the IT Lab during the weekend. 	OIP/AL GA/SY
05/05/06	0830 1200 1900	<ul style="list-style-type: none"> ▪ Trial run GPS survey for the training workshop using the Trimble 4600LS and Trimble ProXR units; GPS survey carried out using the known base station (first order ground control survey mark) on the corner of the basketball court. ▪ GPS Data Processing done during the day using GPS Pathfinder. (Overlaid the data on top of the Majuro Satellite Imagery supplied by the Mr Caleb McClennan of EPA). ▪ Picked up workshop personnel from the Majuro Airport. 	OIP/AL GA/SY
06/05/06	1300	<ul style="list-style-type: none"> ▪ Compiled final Agenda for the PIRMBIS technical training workshop. ▪ Review and check all PowerPoint presentations. 	OIP/AL; MP; EA; FD GA/CF
07/05/06	0800 1900	<ul style="list-style-type: none"> ▪ Install training exercises and software into the IT Lab workstations for the FSM, Kiribati, Palau and Marshall Islands participants. ▪ Print PowerPoint presentations and assemble training manual folders. ▪ Set up the IT Lab for the technical training workshop. 	OIP/AL; MP; EA; FD GA/CF
08/05/06	0830 0900 1400	<p><i>Sub-regional Workshop –</i></p> <ul style="list-style-type: none"> ▪ Welcome by the Secretary of Foreign Affairs – Mrs Viola Chonggum. ▪ Introduction by the OIP Programme Manager – Mrs Mary Power. ▪ Regional Maritime Boundaries Technical Training Workshop begins. ▪ GPS Surveys; demonstration of survey techniques using Trimble GPS equipment to collect survey data for verification against baseline and for ground truth. 	OIP/AL; MP; EA; FD GA/CF
09/05/06	0800	<ul style="list-style-type: none"> ▪ Workshop continues with PIRMBIS Database. 	OIP/AL; MP; EA; FD GA/CF
10/05/06	0800 1800	<ul style="list-style-type: none"> ▪ Workshop continues with instruction on MarZone. ▪ Cocktail Party hosted by SOPAC for invited guests and the participants. 	OIP/AL; MP; EA; FD GA/CF
11/05/06	0800	<ul style="list-style-type: none"> ▪ Workshop continues with PIRMBIS, median lines and map production 	OIP/AL; MP; EA; FD GA/CF

<i>Itinerary</i>		<i>Activity Name – South Pacific Sea Level & Climate Monitoring Project Phase III (O.I.P 2.2.1)</i>	<i>ACTION</i>
<i>Date</i>	<i>Time</i>		
12/05/06	0800 1900	<ul style="list-style-type: none"> Final day of Workshop with map production continuing, discussions on future work and MarZone Part 2. BBQ Party hosted by the Ministry of Foreign Affairs, EPA and MIMRA. 	OIP/AL; MP; EA; FD GA/CF
13/05/06	0840 1720	<ul style="list-style-type: none"> Checked in at the Majuro Airport, RMI. – Left Majuro for Guam. Arrived at the Guam International Airport – Checked into Tamuning Plaza Hotel. 	OIP/AL; MP; EA; FD GA/CF
14/05/06	1635 2300	<ul style="list-style-type: none"> Checked in at the Guam International Airport. – Left Guam for Cairns, Australia. Arrived at the Cairns International Airport – Checked into Fig Tree Lodge. 	OIP/AL; MP; EA; FD GA/CF
15/05/06	0630 1200 1900 1930 2030	<ul style="list-style-type: none"> Checked in at the Cairns Domestic Airport. – Left Cairns for Brisbane. – Left Brisbane for Sydney. Checked in at the Sydney International Airport. – Left Sydney for Nadi. Arrived at the Nadi International Airport. Checked into Nadi Domestic Lounge. – Left Nadi for Suva. 	OIP/AL; EA; FD

<i>Additional Notes and Comments</i>	<i>Action</i>
<p>The survey report with all the survey computations, adjustments and results will be prepared into a survey technical report for the Sea Level Project. In comparison to this method of precise differential levelling survey; the total station method survey report will be prepared by Mr Steve Yates of Geoscience Australia.</p> <p>A technical training report for the Sub-regional Maritime Boundaries Workshop held in Majuro from 8th to 12th May 2006 will be prepared separately.</p>	<p>AL/SOPAC SY/GA</p> <p>AL & EA/ SOPAC</p>

Reference Documents

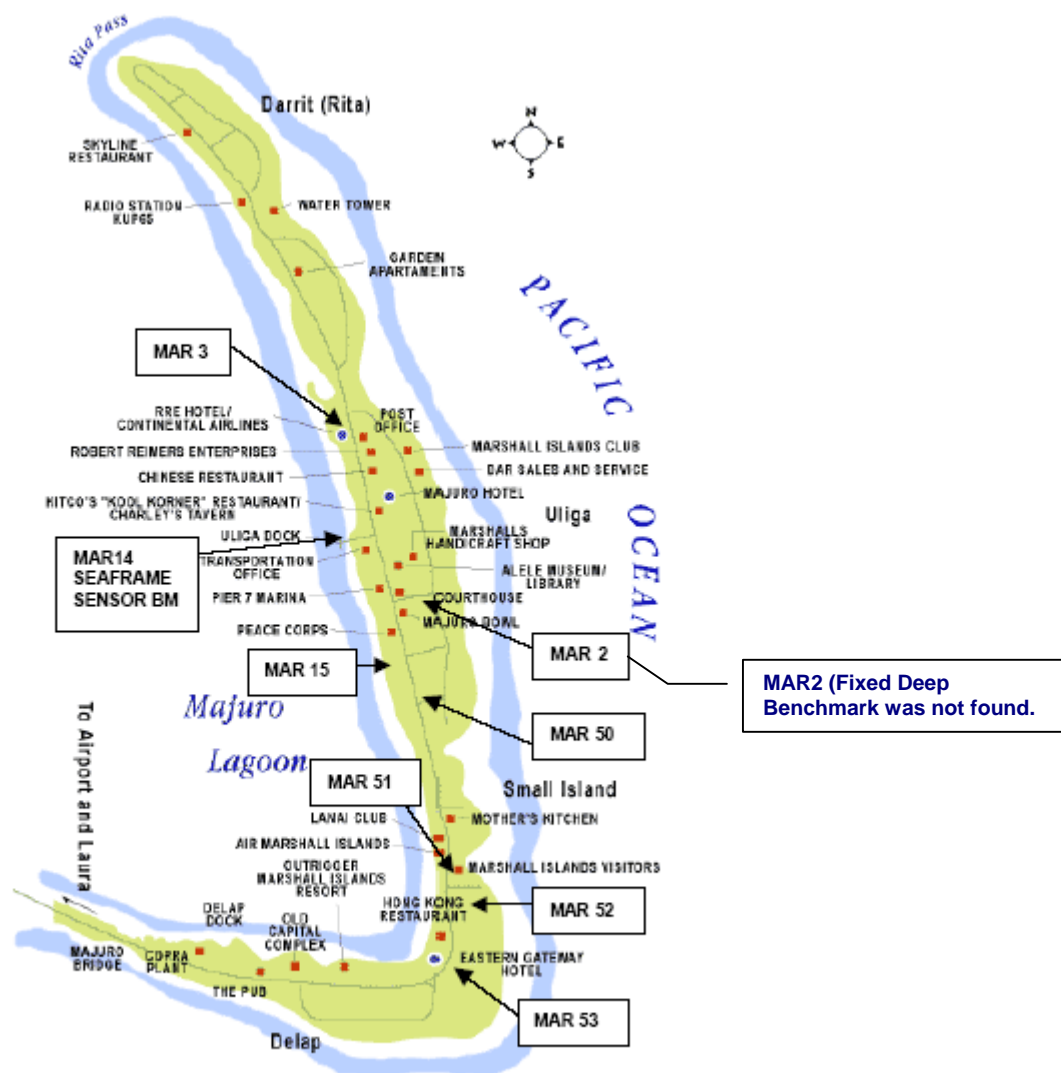
SOPAC Work Plan: – Ocean & Islands Task Activity 2.2.1 & 1.2.1
 South Pacific Sea Level & Climate Monitoring Project Phase – Annual Plan 2005 – 2006 (Component 2)

Annexes:

Annex 1: Location of the Bench Marks in Majuro, Republic of Marshall Islands

Annex 2: Agenda for the Sub-regional Maritime Boundaries Workshop

Annex 1: Location of the Bench Marks in Majuro, Republic of Marshall Islands



Annex 2: Agenda for the Sub-regional Maritime Boundaries Workshop - Technical Aspects for Delimitation held in the IT lab of Marshall Islands USP Centre from 8th to 12th May 2006.

Time	Activity	Presenter
	<i>Monday 8th May 2006</i>	
0900-0905	Prayer Ceremony	Albon Ishoda
0905-0915	Welcome by Republic of Marshall Islands	Viola Chonggum
0915-0925	Introduction by SOPAC	Mary
0925-0940	Overview – Pacific Islands Regional Maritime Boundaries Project	Emily
0940-1000	Introduction to Maritime Terms	Colin
1015-1035	Datum & Projections	Andrick
1035-1230	Transformation & Registration of scanned maps	Emily
1330-1345	GPS Surveys	Andrick
1345-1600	GPS Fieldwork	Andrick
	<i>Tuesday 9th May 2006</i>	
0830-0900	GPS Data Processing	Andrick
0900-1600	PIRMBIS Database <ul style="list-style-type: none"> - Table Design - Attributes - Digitising from the scanned maps - Setting up individual country data tables ready for PIRMBIS 	ALL
	<i>Wednesday 10th May 2006</i>	
0830-0915	MarZoneFE Translator Import <ul style="list-style-type: none"> - Getting data formatted for MarZone 	Emily
0915-1230	MarZone Part 1 <ul style="list-style-type: none"> - Generating boundaries 	Colin
1330-1430	MarZoneFE Translator export Getting data formatted for MapInfo	Emily
1430-1600	PIRMBIS <ul style="list-style-type: none"> - Getting data into tables - Creation of MZ and BP tables 	Andrick
	<i>Thursday 11th May 2006</i>	
0830-1230	PIRMBIS continued	Andrick
1330-1600	Median lines	Colin
	<i>Friday 12th May 2006</i>	
0830-1115	Map production	Andrick
1115-1215	Where to from now? <ul style="list-style-type: none"> - <i>Discussion: Toward Effective Options to Complete Maritime Boundary Delimitation Activities</i> 	ALL
1215-1230	Closing Comments	Mary
330-1600	MarZone Part 2 Project (extended Continental Shelf)	Colin