

# Reference Frame in Practice Workshop 1A

## Status of Geodetic Infrastructure in the Solomon Islands

Mr Jimmy Ikina

# FIG Pacific Small Island Developing States Symposium

*Policies and Practices for Responsible Governance*



Fiji 18–20 September 2013

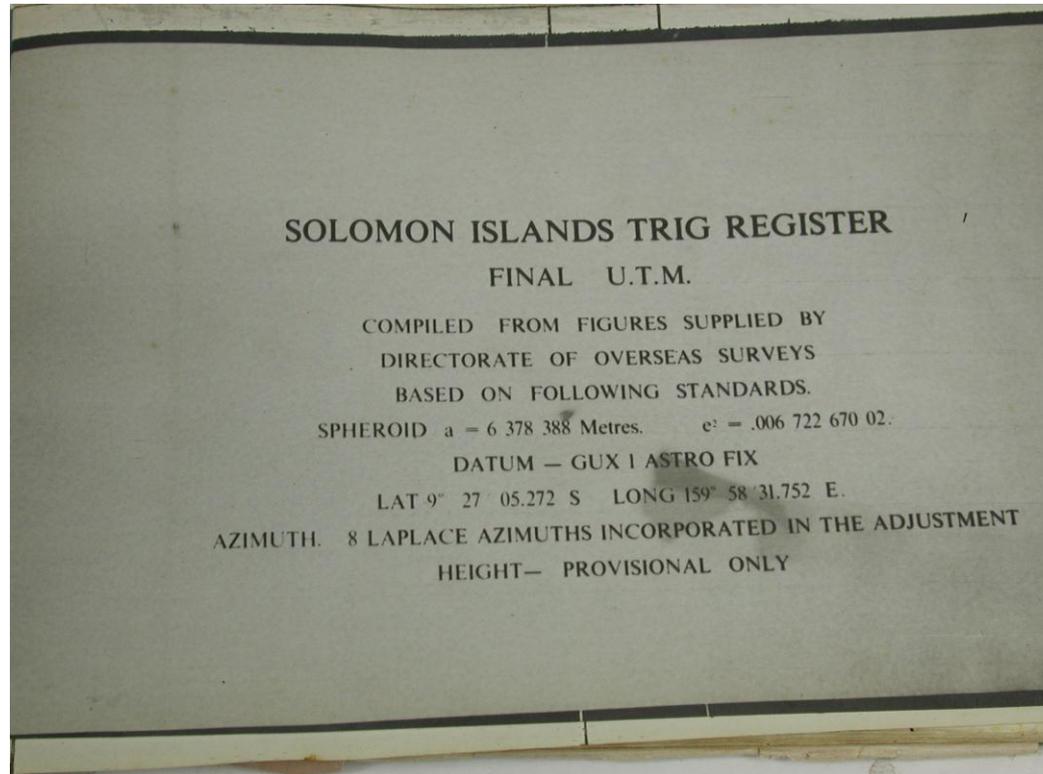
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## 1. Existing Geodetic Infrastructure

- We have 2nd Order Geodetic Control Network which covers the entire country. It has horizontal and vertical values.
- The vertical/height value is on provisional basis and is linked to the “High Water Mark” as its datum.
- Our initial datum was based on the International Spheroid.



*A copy of the original cover page*



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## A copy of the Geodetic Network around Guadalcanal

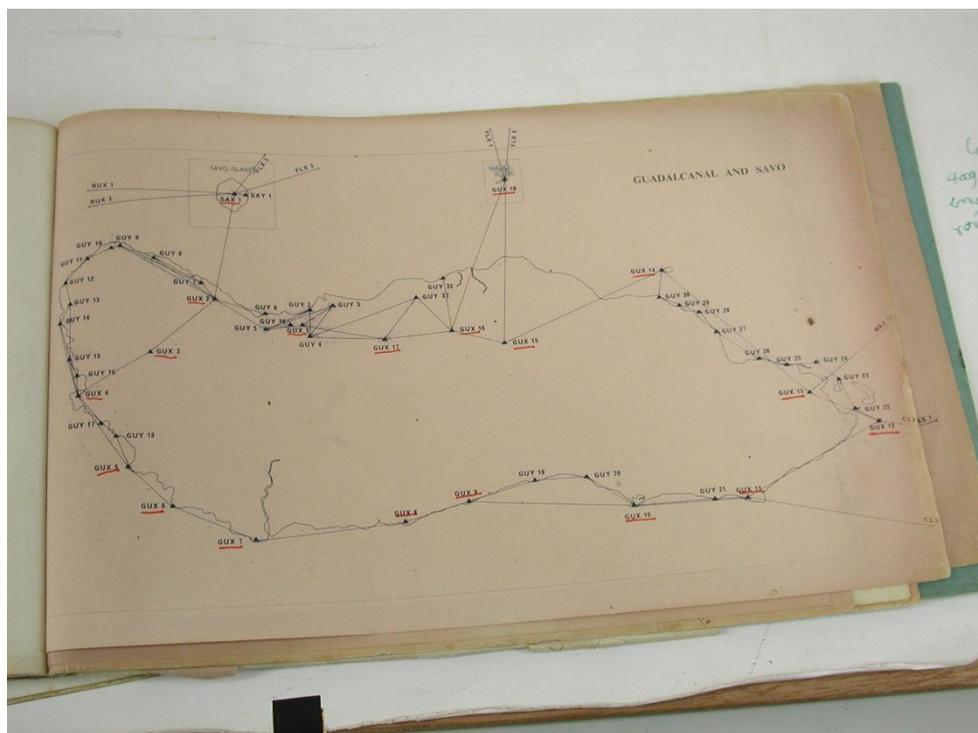


FIG Commission 5 Position and Measurement

United Nations Global Geospatial Information Management – Asia Pacific



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## Table showing the details about the Geo-detic controls

STATION NO.	GEOGRAPHICALS		U.T.M. CO-ORDINATES		CONVERSIONS	SCALE FACTOR	EPOCH	HEIGHT METRES	LOCALITY OR STATION NAME
	LATITUDE	LONGITUDE	EAST	NORTH					
BAI 1	9 01 21.500	158 43 49.005	470 354.40	9 002 620.34	-02 32.3	0.999611	57	1.8	Barua Island
CHX 1	7 09 46.050	156 51 55.207	264 246.67	9 207 699.08	-15 58.6	1.000288	57	45.0	Vonal Point
CHX 2	7 17 35.410	157 00 29.557	280 086.66	9 193 409.16	-15 10.5	1.000150	*	27.1	Sumbi
CHX 3	7 21 30.954	157 06 45.042	291 667.78	9 188 105.50	-14 59.5	1.000137	*	141.4	Sarba
CHX 4	7 22 30.319	157 21 02.296	317 542.60	9 184 440.55	-12 42.4	1.000010	*	392.1	Bombae Mission
CHX 5	7 30 24.254	157 43 10.411	358 718.05	9 170 008.40	-10 02.5	0.999847	*	5.0	Omata Island
CHX 6	7 38 25.405	157 31 24.596	357 016.18	9 138 075.75	-11 16.2	0.999929	*	605.2	Humbro Peak
CHX 7	6 57 06.861	157 06 07.283	290 298.75	9 231 147.96	-13 47.3	1.000144	*	21.6	Tuata Island
CHX 8	6 50 46.310	156 57 36.480	275 241.45	9 242 763.26	-14 25.1	1.000225	*	16.3	Marapepe Island
CHX 9	6 40 20.447	156 58 12.829	255 752.13	9 261 837.40	-16 25.0	1.000445	*	176.5	Kavare Peak
CHX 10	6 37 17.482	156 59 38.915	222 510.97	9 267 394.94	-17 20.9	1.000950	*	170.7	Tamba Bay
CHX 11	6 49 21.074	156 31 37.437	226 678.44	9 245 161.45	-17 38.2	1.000925	*	75.2	Koli Mission
CHY 1	6 48 43.746	156 21 12.480	225 903.01	9 244 450.62	-17 42.2	1.000930	*	25.6	Koli Island
CHY 2	6 37 54.459	156 34 56.434	232 875.76	9 266 165.86	-16 45.9	1.000484	*	0.8	Tamba Tamba Island
CHY 3	6 45 10.820	156 45 13.529	251 700.02	9 252 974.56	-15 51.4	1.000563	*	0.8	Masa Point
CHY 4	6 47 00.343	156 49 55.159	259 752.42	9 249 645.45	-15 24.7	1.000314	*	13.2	Saruvore Point
CHY 5	7 07 02.630	157 09 36.455	296 809.36	9 212 860.21	-13 40.9	1.000111	*	105.1	Batavia
CHY 6	7 11 15.562	157 16 55.027	309 668.40	9 205 047.06	-12 25.7	1.000048	*	24.6	Varanga Point
CHY 7	6 45 54.637	156 45 59.057	254 948.02	9 251 642.32	-15 40.6	1.000343	*	1.0	Voru Voru
CHY 8	6 57 24.741	156 41 09.760	244 319.80	9 230 384.60	-16 48.5	1.000409	*	18.2	Sasa Point
CHY 9	7 02 30.450	156 45 24.082	253 095.50	9 221 032.36	-16 26.9	1.000254	*	102.4	Saasanga
CHY 10	7 11 59.064	156 54 16.573	268 601.67	9 203 631.35	-15 45.8	0.999913	*	22.5	Totoli Island
CHY 11	7 15 20.145	157 00 13.151	279 870.78	9 177 501.70	-15 06.0	1.000201	*	55.9	Idoli Bay
CHY 12	7 27 20.195	157 33 33.435	343 038.51	9 175 617.22	-11 13.1	0.999905	*	0.1	Rob Roy Island
CHY 13	7 23 45.270	157 29 55.640	345 494.67	9 182 195.92	-11 59.8	0.999866	*	0.2	Sanger Island
CHY 14	7 26 45.716	157 34 54.627	349 025.69	9 174 652.44	-13 01.8	0.999896	*	0.6	Silikana Island
CHY 15	7 27 50.826	157 37 22.140	353 569.76	9 177 557.47	-10 26.9	0.999875	*	34.6	Haycock Island
CHY 16	7 26 16.074	157 39 18.084	353 569.76	9 172 507.30	-08 51.4	0.999704	*	43.2	Pauba Inlet
CHY 17	7 28 51.603	157 51 59.174	374 916.53	9 172 507.30	-08 51.4	1.000962	*	7.1	Hokli
CHY 18	6 35 23.606	156 28 43.432	221 186.00	9 270 972.06	-17 22.3	1.000586	*	1.5	Redman Island
CHY 19	6 45 36.995	156 26 48.887	217 764.87	9 252 002.82	-10 02.7	1.000625	*	0.9	Rapa Island
CHY 20	6 43 12.982	156 23 48.994	212 212.29	9 256 400.19	-18 17.4	1.000084	*	-0.9	Vagata Island
CHY 21	7 22 13.973	157 12 28.959	302 154.59	9 184 882.04	-13 47.9	0.999834	*	1.6	Tesar Island
CHY 22	7 28 13.922	157 45 16.969	362 644.58	9 174 031.53	-09 42.7	0.999855	*	0.3	Gitson Island
TAHAR 84b	7 22 35.342	157 40 21.986	363 496.39	9 184 396.42	-10 13.6	0.999895	*	25.6	
TAHAR 84c	7 27 51.785	157 41 55.217	366 390.08	9 174 693.45	-10 08.7	1.000142	*	6.6	
TAHAR 84d	7 27 51.785	157 41 55.217	366 390.08	9 174 693.45	-10 08.7	1.000142	*	6.6	
TAHAR 84e	6 58 06.613	157 06 19.152	290 671.09	9 229 304.39	-13 47.8				



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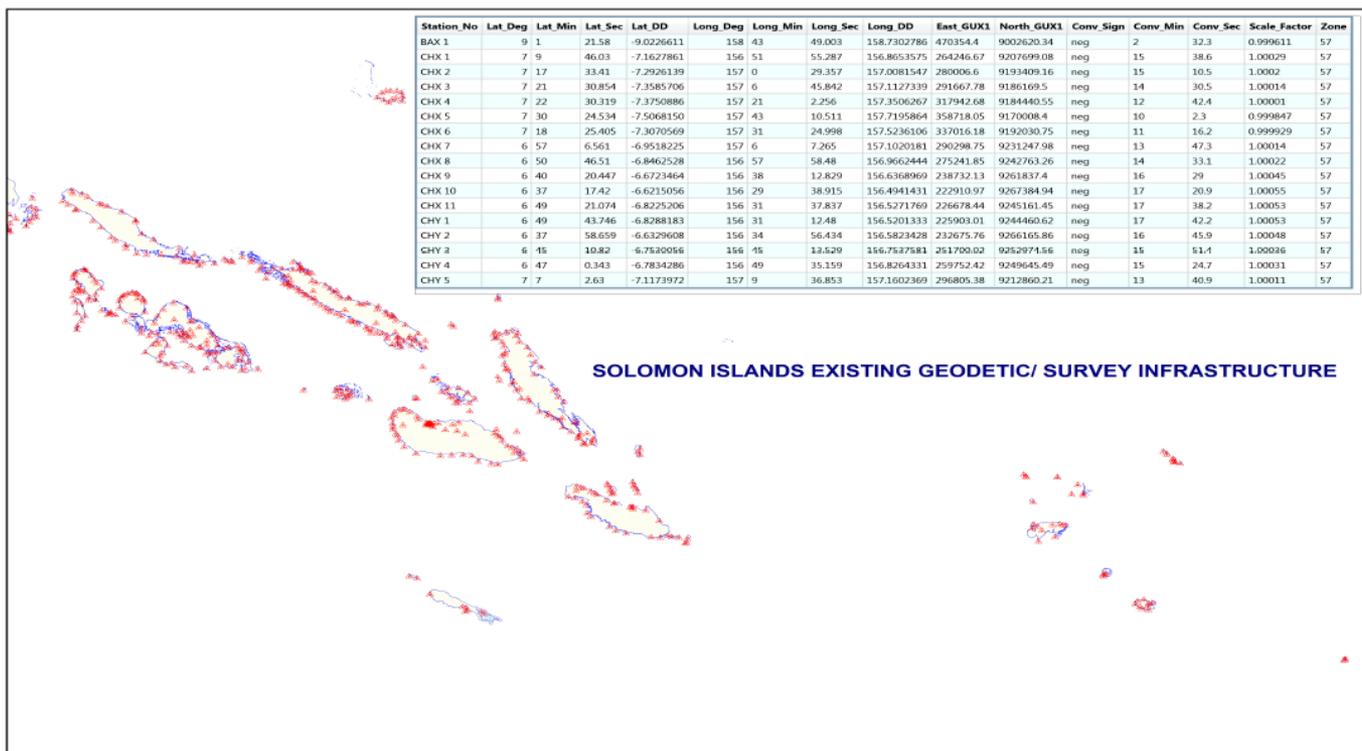
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## All of these have been digitized into MapInfo



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## 2. Status of Existing Surveying Capacity

- Since the establishment of the Control Network, some 50 years ago none of our current manpower has knowledge or experience in this kind of survey, let alone the use of relevant equipment and software that are currently now been used.
- The current surveying staff is qualified to diploma level only from the Solomon Islands College of Higher Education. Some have worked with private survey firms in the past but on cadastral, topographic and engineering only.
- There is need for these surveyors to adopt survey software such as civilcad, liscad plus others etc.

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## 2. Status of Existing Surveying Capacity

- The breakdown of the PC hosting our GPS Base station plus difficulties with retrieving the original software has handicapped us with differential GPS tasks that need more accuracy.
- The existing cadastral survey data is linked to the GUX1 Astro (Local Geodetic Network). The DCDB (cadastral database) base topographic data, administrative data, some land-use and land cover data obtained from different sources has been integrated the system using WGS84.
- The 2003 National 50K Mapping Revision which covered the entire country uses WGS84.

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## 2. Status of Existing Surveying Capacity

- Currently we are providing government and private surveyors with survey data that is homogeneous throughout the country. If there is any new system that is available and accessible with regards to Geodetic positioning services, we would appreciate any assistance that would enable us to do so.
- Most of our geodetic controls are along the coast and some have been destroyed by rising sea levels. Some of those in the mountains have been destroyed by logging activities and those in built up areas are simply destroyed by development activities such as construction and civil works.



## 2. Status of Existing Surveying Capacity

- Our impediment to further develop or to re-observe the network (which is well out of date) is the lack of experience by our staff, as well the importance of Geodetic Survey is not easily seen by the government as a priority, when competing for funds with other productive sectors.
- Our need can be assisted by the support of experts from outside of the country with their advice and financial assistance.