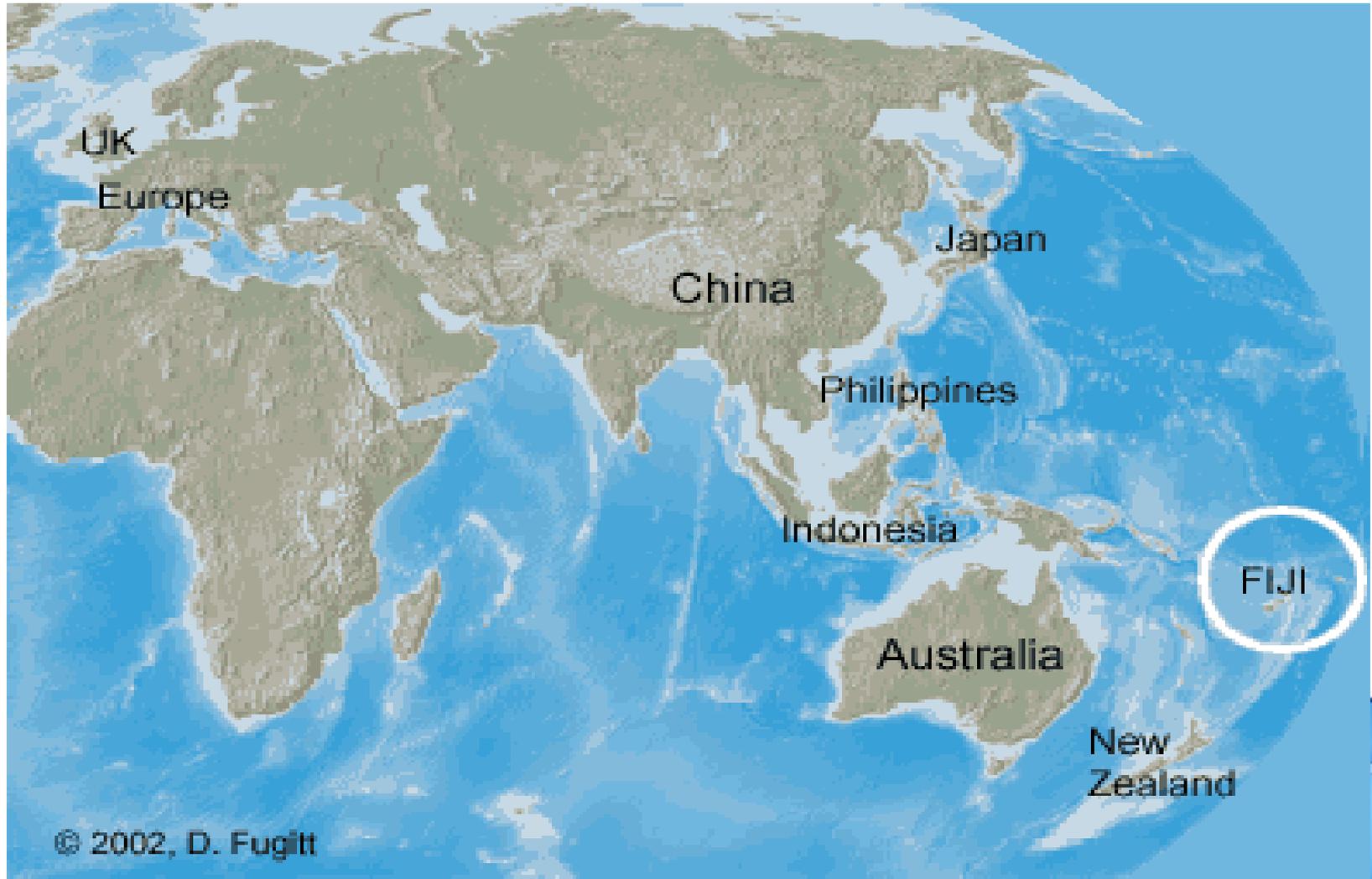


GEODETIC INFRASTRUCTURE - FIJI



Mr. Asakaia Tabua – Geodetic Survey Division, Fiji

GEOGRAPHICAL LOCATION



© 2002, D. Fugitt

LAND STATISTICS

- Lat 17° 45' S, Long 175° 00' E
- Population – 858,038
- Land Area – 18,274 sq km (300+ islands)
 - iTaukei land – 16,081 sq km (88%)
 - Freehold – 1,462 sq km (8%)
 - State land – 731 sq km (4%)

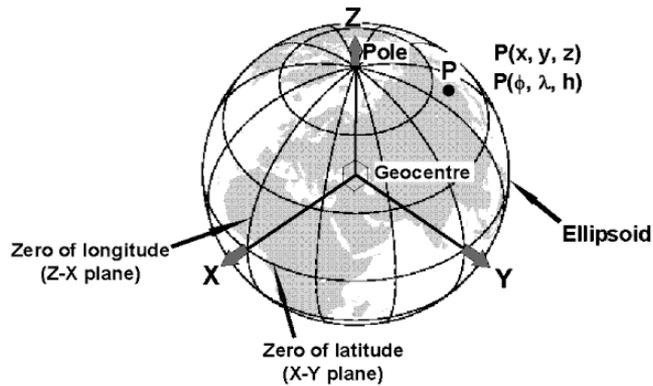


WHAT IS THE ISSUES

Fiji's fundamental position framework is not officially compatible with International Position Reference Systems



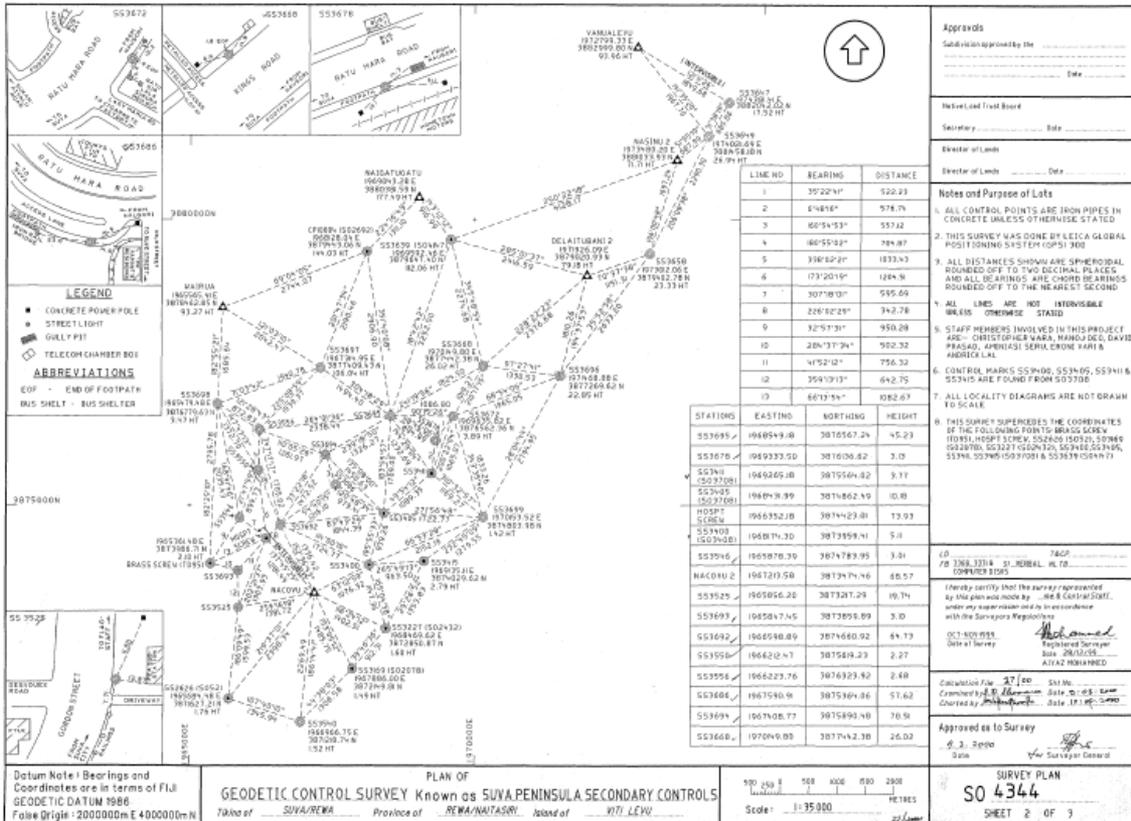
From the whole to the part...



The current positioning system
In Fiji is based on the reference
Ellipsoid WGS 72 - Projection
Transverse Mercator, referred to as
The Fiji Geodetic Datum 1986 and
The Mean Sea Level as the Elevation
Datum.



A Typical Control Survey Record



- Notes and Purpose of Lots**
- ALL CONTROL POINTS ARE IRON PIPES IN CONCRETE UNLESS OTHERWISE STATED
 - THIS SURVEY WAS DONE BY LEICA GLOBAL POSITIONING SYSTEM (GPS) 300
 - ALL DISTANCES SHOWN ARE SPHEROIDAL ROUNDED OFF TO TWO DECIMAL PLACES AND ALL BEARINGS ARE CHORD BEARINGS ROUNDED OFF TO THE NEAREST SECOND
 - ALL LINES ARE NOT INTERVISIBLE UNLESS OTHERWISE STATED
 - STAFF MEMBERS INVOLVED IN THIS PROJECT ARE:- CHRISTOPHER WARA, MANOJ DEO, DAVID PRASAD, AMINIASI SERU, ERONI VARI & ANDRICK LAL
 - CONTROL MARKS SS3400, SS3405, SS3411 & SS3415 ARE FOUND FROM SO3708
 - ALL LOCALITY DIAGRAMS ARE NOT DRAWN TO SCALE
 - THIS SURVEY SUPERCEDES THE COORDINATES OF THE FOLLOWING POINTS: BRASS SCREW (TD95), HOSPITAL SCREW, SS2626 (S052), S03169 (S02078), SS3227 (S02432), SS3400, SS3405, SS3411, SS3415 (S03708) & SS3639 (S04147)

I hereby certify that the survey represented by this plan was made by me & Contr. of Staff. under my supervision and is in accordance with the Surveyors Regulations

OCT-NOV-1999
Date of Survey

Mohamed
Registered Surveyor
Date 28/12/99
A1YAZ MOHAMMED

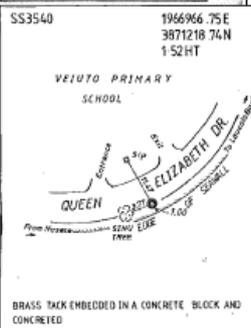
Calculation File 27/00 Sht No.
Examined by A. D. Sharma Date 2.03.2000
Charted by Mohamed Date 10.01.2000

Approved as to Survey

9.3.2000
Date

[Signature]
Surveyor General

SURVEY PLAN
SO 4344
SHEET 2 OF 3

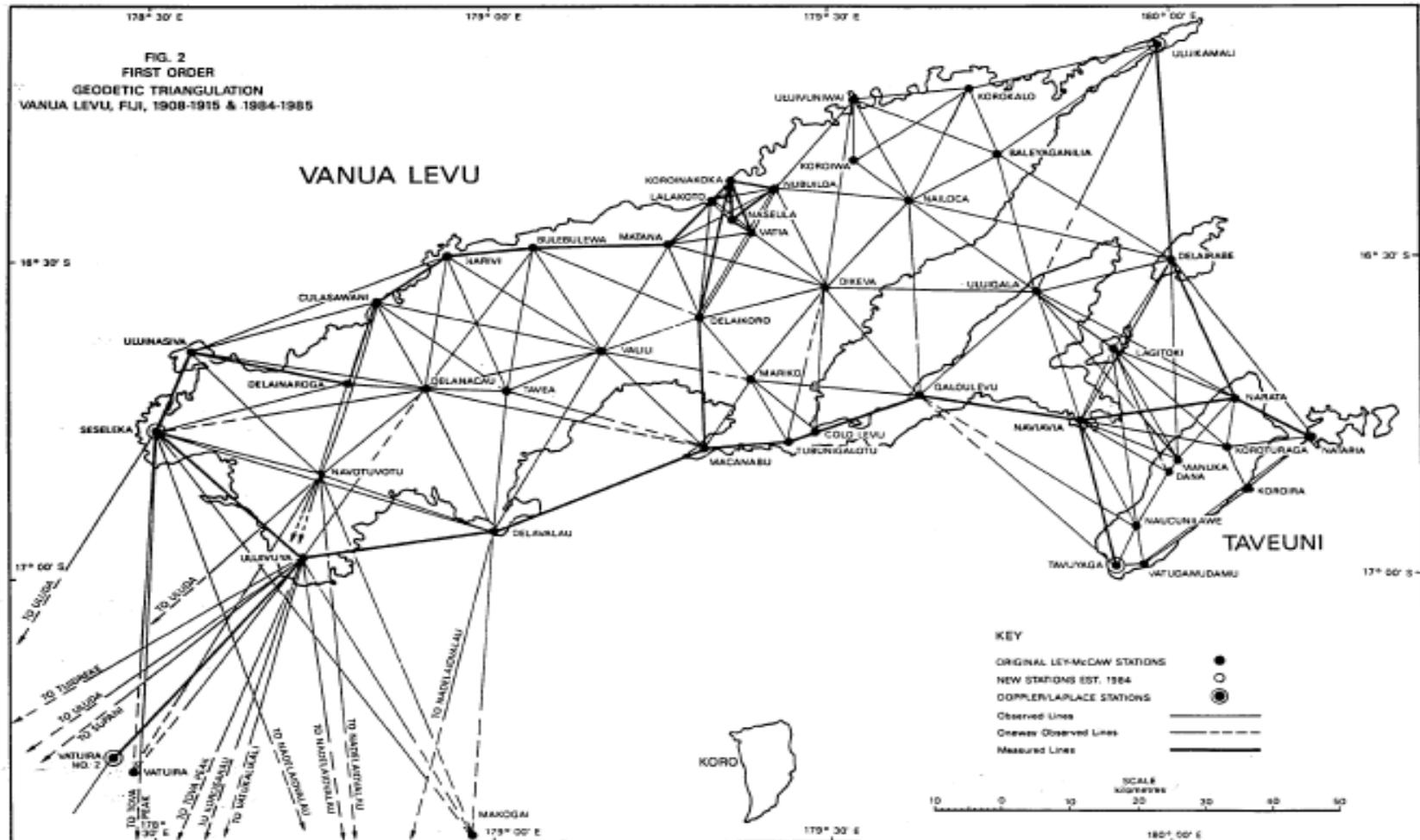


CONTROL SURVEY DATA BASED ON THE CURRENT FIJI GEODATIC DATUM 1986
Reference Ellipsoid WGS 72 - Projection : Transverse Mercator

THE DEFINITION AND ADJUSTMENT OF THE FIJI GEODETIC DATUM -1986

J. Hannah and J. Maseyk

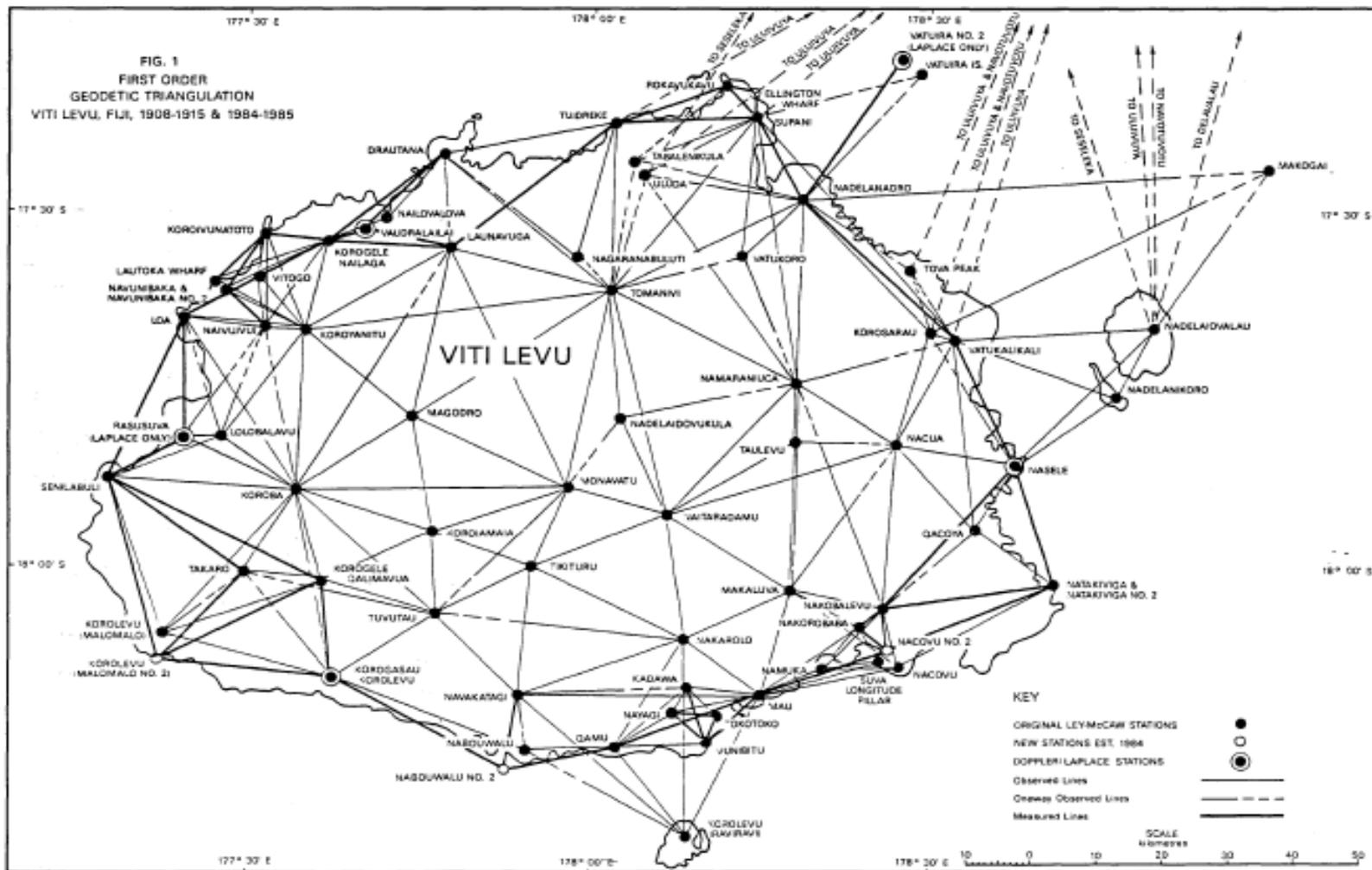
Department of Survey and Land Information, Wellington, New Zealand



THE DEFINITION AND ADJUSTMENT OF THE FIJI GEODETIC DATUM -1986

J. Hannah and J. Maseyk

Department of Survey and Land Information, Wellington, New Zealand



Conclusive indicators necessitating CHANGE

- Inability to relate the actual sea level to landforms in real-time
- Inability to monitor relative tectonic plate movement using ground based controls
- The high costs related to the establishment of lower order ground control using conventional methods
- The availability of space based navigation and positioning systems with it's compatible required resources at manageable costs (Positional Infrastructure - PI)



The Proposed Geodetic Datum Change

- There has never been a better time for Fiji to effect the inevitable geodetic datum change from the current to the space based positioning system using the reference ellipsoid WGS 84 under the International Terrestrial Reference Frame (ITRF)
- If facilitated, the proposed change will ensure that internationally compatible systems will govern our positioning control framework in terms of the positioning infrastructure (PI) required



A few of the Sectors to benefit from the CHANGE

- Land management agencies in managing geospatial information e.g. iTLTB, MLMR
- Asset owners in maintaining and monitoring ancillaries and their performance e.g. LWRM, WAF, FEA
- Disaster Management agencies for monitoring temporal changes and disasters e.g. NDMO
- Navigation with international accreditation agencies demanding extremely accurate positional control (e.g. ground based augmented systems...) e.g. CAAF/AFL



Importance of Modern Reference Frame

- Addresses Important Issues Affecting Development in Fiji



CHALLENGES

- Resources
 - Budget
 - Human (Expertise)
 - Availability of Hardware and Software
 - Equipment
- Effect of Natural Disaster – TC Winston



Way Forward

- Provision of Annual Budget
- Working In Collaboration
- Learn from Others



Thank you.

