SECTION ONE

POSITIONING

1.0 INTRODUCTION

1.1 Existing Geodetic Networks

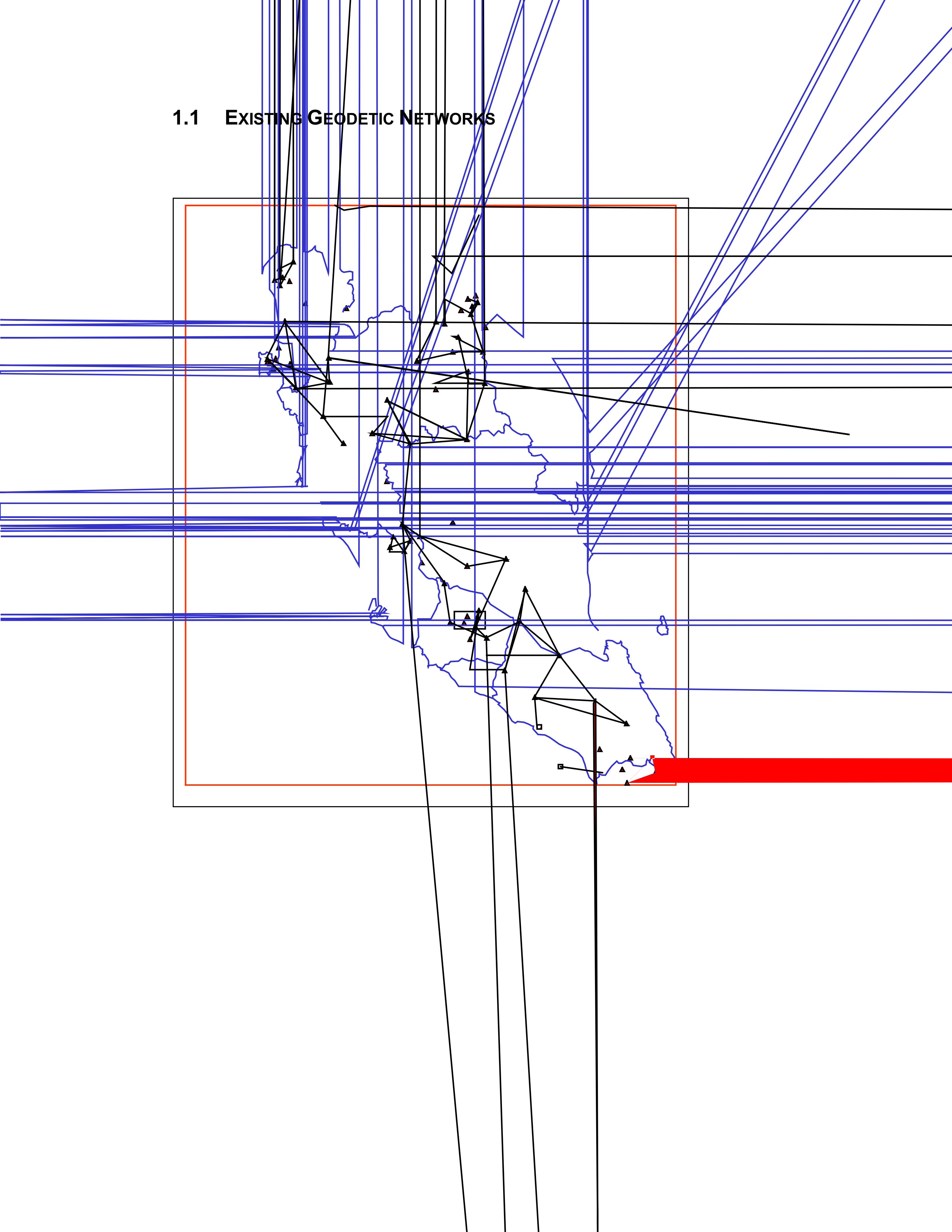

Table 1.1

No.	Parameter	MRT	BT68

Table 1.2

No.	Parameter	Peninsular Malaysia	Sabah & Sarawak
		° °	° °
		° °	° °
		°	°

1.1.2 East Malaysia Geodetic Network

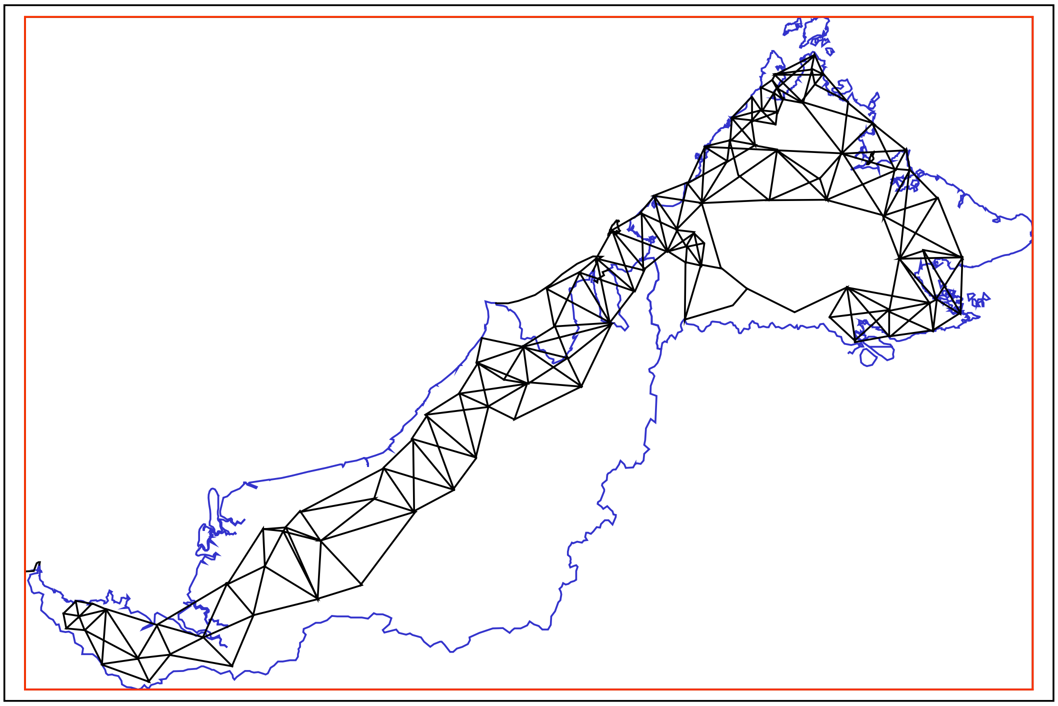

Figure 1.2

1.2 Other Geodetic Networks

1.2.1 South East Asia Datum

1.2.2 Doppler Observations

1.3 EXISTING GPS NETWORKS

1.3.1 Peninsular Malaysia GPS Campaign

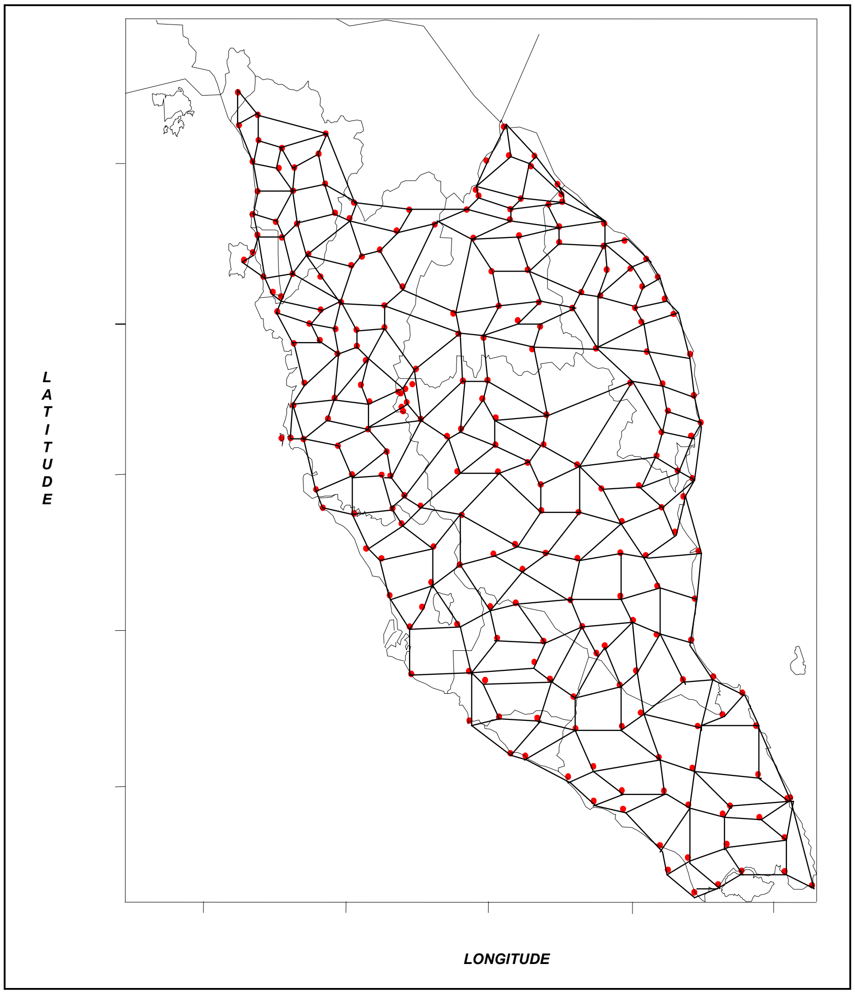

Figure 1.3

Table 1.3

	σ ± σ ± σ ±

1.3.2 GPS Network in Sabah and Sarawak

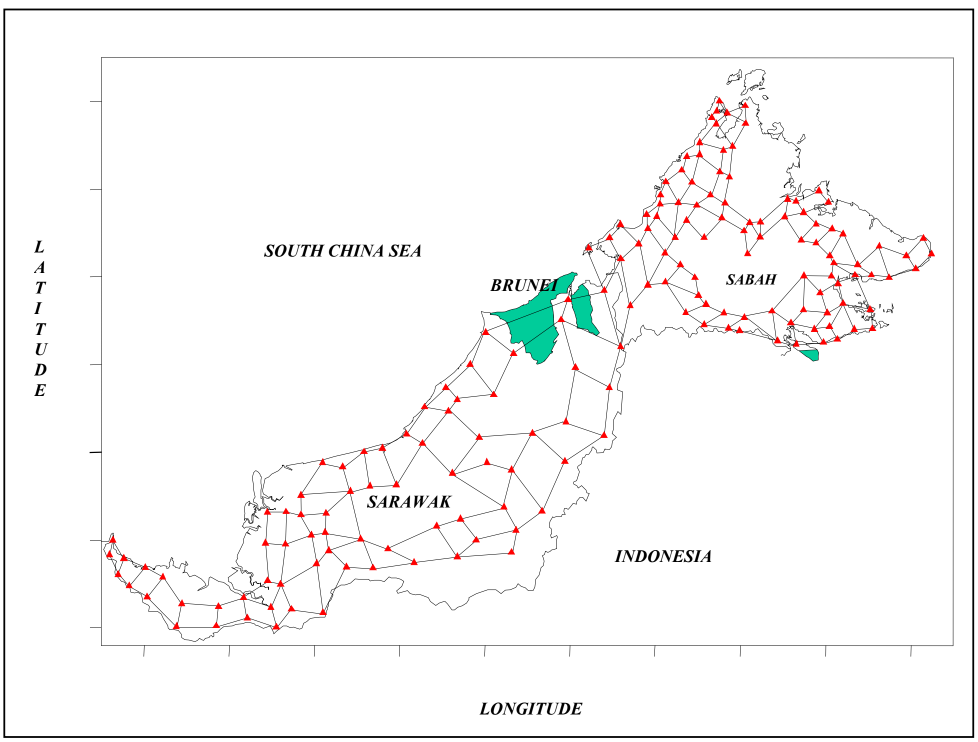

Figure 1.4

Table 1.4

	σ ± σ ± σ ±

1.4 GPS Observation Campaigns in Malaysia

1.4.1 GPS Observations By STRE

1.4.2 GEODYSSEA Project

Table 1.5

Stn. Name	Latitude D M S	Longitude D M S	Ell. Height m

1.4.3 Comparison of Coordinates

Table 1.6

Stn. Name	Latitude D M S	Longitude D M S	Ell. Height m

Table 1.7

Stn. Name	Latitude D M S	Longitude D M S	Ell. Height m

[redacted]

	Diff in Lat (second)	Diff in Long (second)	Diff in Ellip. Ht (m)

Latitude D M S	Longitude D M S	Ell. Height m

	Diff in Lat (sec)	Diff In Long (sec)	Diff in Ellip. Ht m

	Diff in Lat (sec)	Diff In Long (sec)	Diff in Ellip. Ht m

1.5 COMPARISON BETWEEN GPS-DERIVED AND PUBLISHED RSO COORDINATES

1.5.1 Peninsular Malaysia

Table 1.13

Stn	N-PUB	E-PUB	N-GPS	E-GPS	Diff N (m)	Diff E (m)

1.5.2 East Malaysia

Table 1.14

Stn	N-PUB	E-PUB	N-GPS	E-GPS	Diff N (m)	Diff E (m)

1.6 Scale Study for Peninsular Malaysia

Table 1.15

FROM	TO	Approx. Dist. (km)	Location	Scale (ppm)

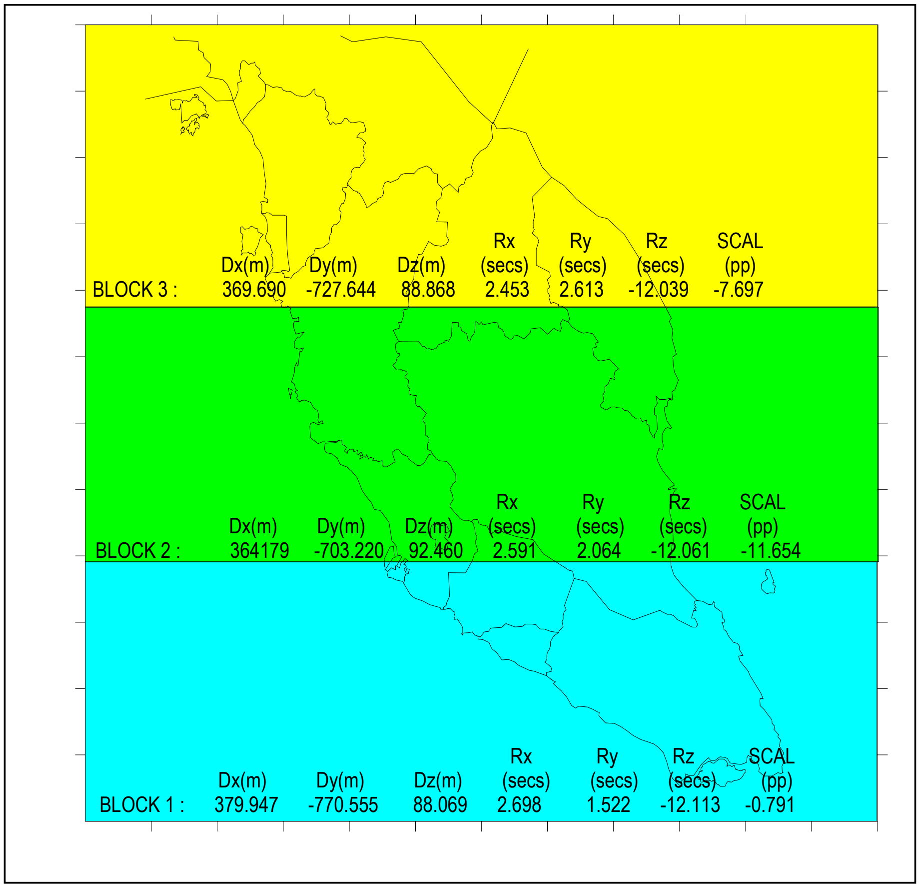

Figure 1.5

Table 1.16

Block	Dx (m)	Dy (m)	Dz (m)	Rx (m)	Ry (m)	Rz (m)	Scale (ppm)

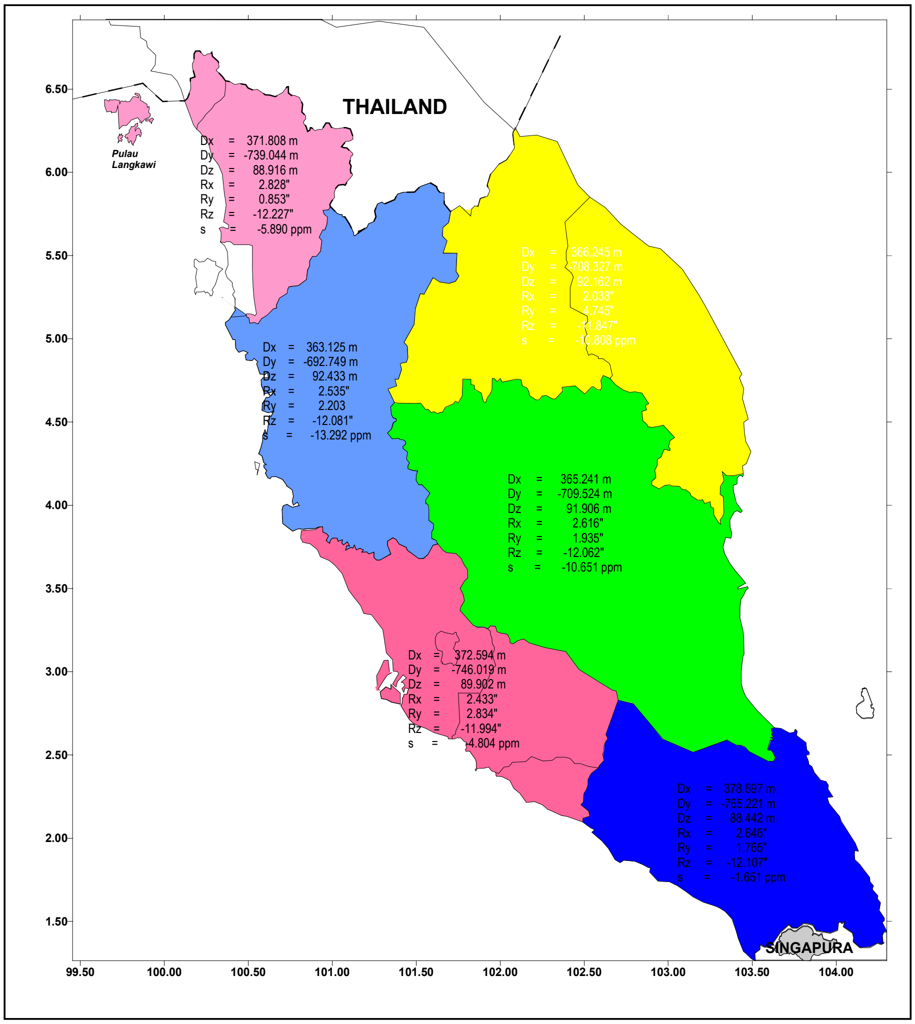
THAILAND
Pulau Langkawi
Dx = 371.808 m
Dy = -739.044 m
Dz = 88.916 m
Rx = 2.828"
Ry = 0.853"
Rz = -12.227"
s = -5.890 ppm
Dx = 366.245 m
Dy = -708.327 m
Dz = 92.162 m
Rx = 2.038"
Ry = 4.745"
Rz = -11.847"
s = -10.808 ppm
Dx = 363.125 m
Dy = -692.749 m
Dz = 92.433 m
Rx = 2.535"
Ry = 2.203
Rz = -12.081"
s = -13.292 ppm
Dx = 365.241 m
Dy = -709.524 m
Dz = 91.906 m
Rx = 2.616"
Ry = 1.935"
Rz = -12.062"
s = -10.651 ppm
Dx = 372.594 m
Dy = -746.019 m
Dz = 89.902 m
Rx = 2.433"
Ry = 2.834"
Rz = -11.994"
s = -4.804 ppm
Dx = 378.697 m
Dy = -765.221 m
Dz = 88.442 m
Rx = 2.646"
Ry = 1.765"
Rz = -12.107"
s = -1.651 ppm
SINGAPURA
6.50
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
99.50
100.00
100.50
101.00
101.50
102.00
102.50
103.00
103.50
104.00

Figure 1.6

Table 1.17

Block	Dx (m)	Dy (m)	Dz (m)	Rx (m)	Ry (m)	Rz (m)	Scale (ppm)