

Project: D:\Downloads\POD GHIMBAV\GPS POD GHIMBAV.spr

Coordinate System: GEO [Geographic]

Datum:

WGS84

Geoid Model: <None>

Units:

Meters

Adjustment Time: 2022/11/01 00:32:53 (UTC)

Adjustment Type:

Constrained

Computation Level:

Full Adjustment

Additional Parameters:

- Deflection of vertical (N-S)	Not used
- Deflection of vertical (E-W)	Not used
- Horizontal rotation	Not used
- Scale difference	Not used

Iteration Criteria:

- Maximum iteration	5
- Maximum coordinate difference (m)	0.0001

Reference Datum:

- Datum Name	WGS84
- Semi-major axis (m)	6378137.000
- Flattening (m)	1.0/298.257222101

Weight Options:

- Use modeled standard deviations
- Use individual weighting scale

Modeled Standard Deviations

- X component	5.0 mm + 1.0 ppm
- Y component	5.0 mm + 1.0 ppm
- Z component	5.0 mm + 1.0 ppm

Geoid Model: NONE

- Orthometric heights will not be computed

Transformation to Map Coordinate System ...NO

Summary of Adjustment Statistics

Number of Points:

- Horizontal fixed & height fixed	2
- Horizontal fixed & height free	0
- Horizontal free & height fixed	0
- Horizontal free & height free	4

total	6

Number of Unknowns:

- Latitude	4
- Longitude	4
- Height	4
- Additional parameters	0

(a) total	12

Number of observations

- X component	14
- Y component	14
- Z component	14

(b) total	42

Number of Rank Defect

(c) 0

Number of Total Redundancy

(b)+(c)-(a) 30

Iterations Used

2

Chi Square Test on the Variance Factor

Total Number of Observations: 42
Redundancy: 30
Confidence Level: 95%
A Priori Variance Factor: 1.0000
A Posteriori Variance Factor (VF): 3.2247

Chi Square Test on the Variance Factor (3.2247)
0.5597 < VF < 1.5660

Standard Deviations for the input observations appear to be too optimistic.

** Note: The Standardized Deviation of Unit Weight is the square root of the Variance Factor.

Input Coordinates and Corrections

Point		Input Coordinates	Corrections Seconds	m	Horizontal Vector
1	P	45 39 31.78708	0.00027	0.008	0.028 m
	L	25 30 16.89542	0.00125	0.027	73 deg
	H	601.188 m		0.029	
2	P	45 39 33.28330	0.00007	0.002	0.041 m
	L	25 30 15.09603	0.00188	0.041	87 deg
	H	600.765 m		0.007	
3	P	45 39 37.85892	- 0.00002	-0.001	0.030 m
	L	25 30 08.53346	0.00137	0.030	91 deg
	H	600.470 m		0.041	
4	P	45 39 38.81709	0.00002	0.000	0.032 m
	L	25 30 07.43494	0.00146	0.032	89 deg
	H	600.447 m		0.023	
FAGA FIXED 3-D	P	45 50 46.21364	0.00000	0.000	0.000 m
	L	24 58 07.15110	0.00000	0.000	0 deg
	H	475.845 m		0.000	
SFGH FIXED 3-D	P	45 51 59.08747	0.00000	0.000	0.000 m
	L	25 47 17.78765	0.00000	0.000	0 deg
	H	580.621 m		0.000	

Adjusted Coordinates and Standard Deviations

Point		Adjusted Coordinates	Std Dev (0.001sec)	(mm)	95% Ellipse
1	P	45 39 31.78735	0.69863	21.6	major 52.8 mm
	L	25 30 16.89667	0.99630	21.6	azm. 0 deg
	H	601.218 m		21.6	minor 52.8 mm
2	P	45 39 33.28337	0.71420	22.0	major 54.0 mm
	L	25 30 15.09791	1.01850	22.0	azm. 0 deg

	H	600.772 m		22.1	minor 54.0 mm
3					
	P	45 39 37.85890	0.73283	22.6	major 55.4 mm
	L	25 30 08.53483	1.04509	22.6	azm. 0 deg
	H	600.512 m		22.6	minor 55.4 mm
4					
	P	45 39 38.81711	0.71421	22.1	major 54.0 mm
	L	25 30 07.43640	1.01854	22.1	azm. 0 deg
	H	600.470 m		22.1	minor 54.0 mm
FAGA					
FIXED 3-D	P	45 50 46.21364	0.00000	0.0	major 0.0 mm
	L	24 58 07.15110	0.00000	0.0	azm. 0 deg
	H	475.845 m		0.0	minor 0.0 mm
SFGH					
FIXED 3-D	P	45 51 59.08747	0.00000	0.0	major 0.0 mm
	L	25 47 17.78765	0.00000	0.0	azm. 0 deg
	H	580.621 m		0.0	minor 0.0 mm

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                        Observations and Residuals
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	Observations (m)	Std Dev (m)	Residuals (m)	Standardized Residuals	PPM
Vector: 1-3 weight= 1.00					
dN	187.4700	0.0017	0.001	-0.827	2.648
dE	-181.0402	0.0024	-0.001	-1.254	3.991
dH	-0.7104	0.0133	-0.001	-0.439	1.381
Vector: 1-4 weight= 1.00					
dN	217.0555	0.0009	0.002	-0.184	1.809
dE	-204.8230	0.0012	0.001	0.370	3.652
dH	-0.7562	0.0088	0.002	0.813	8.042
Vector: 1-2 weight= 1.00					
dN	46.1950	0.0016	-0.003	0.621	30.121
dE	-38.9462	0.0018	0.001	0.563	27.307
dH	-0.4465	0.0102	0.000	-0.600	29.128
Vector: 2-4 weight= 1.00					
dN	170.8652	0.0019	-0.001	0.038	0.462
dE	-165.8755	0.0017	-0.002	-0.696	8.524
dH	-0.3038	0.0113	-0.002	-0.832	10.204
Vector: SFGH-1 weight= 1.00					
dN	-23035.0723	0.0007	0.002	-0.180	0.169
dE	-22103.7480	0.0007	0.034	1.157	1.087
dH	-59.3093	0.0045	0.017	0.462	0.434
Vector: SFGH-4 weight= 1.00					
dN	-22817.2871	0.0007	0.001	0.016	0.015
dE	-22307.7969	0.0006	0.032	1.181	1.106
dH	-59.9871	0.0046	0.023	0.567	0.531
Vector: FAGA-1 Occ.[02] weight= 1.00					
dN	-20683.9160	0.0005	-0.038	0.442	0.430
dE	41781.2539	0.0010	-0.008	0.024	0.024
dH	-44.8058	0.0065	-0.012	-0.768	0.747
Vector: SFGH-1 Occ.[02] weight= 1.00					
dN	-23035.0781	0.0003	0.008	0.052	0.048
dE	-22103.7422	0.0006	0.027	1.026	0.964
dH	-59.3209	0.0040	0.029	0.890	0.836
Vector: SFGH-2 weight= 1.00					
dN	-22988.7422	0.0010	0.002	-0.483	0.452

dE	-22142.5371	0.0012	0.041	1.280	1.198
dH	-59.7116	0.0071	0.007	0.223	0.209
Vector: FAGA-3 weight= 1.00					
dN	-20497.6582	0.0011	-0.043	0.686	0.665
dE	41598.9609	0.0020	-0.005	0.190	0.184
dH	-43.7335	0.0091	0.001	-0.653	0.632
Vector: FAGA-4 weight= 1.00					
dN	-20468.2266	0.0009	-0.048	0.807	0.783
dE	41574.9844	0.0008	-0.008	0.190	0.184
dH	-43.5250	0.0057	0.003	-0.708	0.687
Vector: FAGA-1 weight= 1.00					
dN	-20683.9043	0.0009	-0.049	0.897	0.872
dE	41781.2539	0.0012	-0.008	0.235	0.229
dH	-44.8267	0.0061	0.009	-0.612	0.595
Vector: SFGH-3 weight= 1.00					
dN	-22846.9551	0.0009	-0.001	0.464	0.433
dE	-22284.1172	0.0016	0.029	1.321	1.231
dH	-59.9889	0.0076	0.042	0.984	0.917
Vector: FAGA-2 weight= 1.00					
dN	-20638.1738	0.0109	0.151	-2.652 *	2.574
dE	41742.3086	0.0395	-0.314	-8.931 **	8.668
dH	-44.6113	0.0585	-0.247	-1.598	1.551

* - Possible Outlier

** - Likely Outlier

Reliability of Observations

Standard Deviations			Redundancy	Reliability	
Corr Obs (mm)	Residuals (mm)	Internal		External	
Vector: 1-2 weight= 1.00					
N	1.88	1.36	0.35	0.04	5.69
E	3.41	2.47	0.35	0.04	5.69
H	11.97	8.69	0.35	0.04	5.69
Vector: 1-4 weight= 1.00					
N	1.88	1.37	0.35	0.04	5.68
E	3.41	2.48	0.35	0.04	5.68
H	11.98	8.72	0.35	0.04	5.68
Vector: FAGA-1 weight= 1.00					
N	5.57	21.03	0.93	0.20	1.09
E	10.11	38.15	0.93	0.20	1.09
H	35.53	134.07	0.93	0.20	1.09
Vector: SFGH-1 weight= 1.00					
N	5.57	13.92	0.86	0.14	1.65
E	10.11	25.25	0.86	0.14	1.65
H	35.53	88.74	0.86	0.14	1.65
Vector: 1-3 weight= 1.00					
N	2.29	0.39	0.03	0.12	24.54
E	4.16	0.70	0.03	0.12	24.54
H	14.61	2.46	0.03	0.12	24.54
Vector: FAGA-1 Occ.[02] weight= 1.00					
N	5.57	21.03	0.93	0.20	1.09
E	10.11	38.15	0.93	0.20	1.09
H	35.53	134.07	0.93	0.20	1.09
Vector: SFGH-1 Occ.[02] weight= 1.00					
N	5.57	13.92	0.86	0.14	1.65
E	10.11	25.25	0.86	0.14	1.65

H	35.53	88.74	0.86	0.14	1.65
Vector: 2-4 weight= 1.00					
N	1.88	1.36	0.34	0.04	5.74
E	3.42	2.46	0.34	0.04	5.74
H	12.02	8.65	0.34	0.04	5.74
Vector: FAGA-2 weight= 1.00					
N	5.70	20.97	0.93	0.20	1.12
E	10.34	38.04	0.93	0.20	1.12
H	36.33	133.69	0.93	0.20	1.12
Vector: SFGH-2 weight= 1.00					
N	5.70	13.86	0.86	0.14	1.70
E	10.34	25.15	0.86	0.14	1.70
H	36.33	88.40	0.86	0.14	1.70
Vector: FAGA-3 weight= 1.00					
N	5.85	20.84	0.93	0.20	1.16
E	10.61	37.80	0.93	0.20	1.16
H	37.27	132.85	0.93	0.20	1.16
Vector: SFGH-3 weight= 1.00					
N	5.85	13.80	0.85	0.14	1.75
E	10.61	25.04	0.85	0.14	1.75
H	37.27	87.99	0.85	0.14	1.75
Vector: FAGA-4 weight= 1.00					
N	5.70	20.86	0.93	0.20	1.13
E	10.34	37.84	0.93	0.20	1.13
H	36.33	133.00	0.93	0.20	1.13
Vector: SFGH-4 weight= 1.00					
N	5.70	13.86	0.86	0.14	1.70
E	10.34	25.14	0.86	0.14	1.70
H	36.33	88.37	0.86	0.14	1.70

----- Relative Precision -----			
Ellip. Dist. Height Diff. Azimuth (m)	Std Dev (mm)	Relative Precision	95% Ellipse
Vector: 1-2 weight= 1.00 60.413 -0.446 319 51 54.4	7.3 7.3 24.8sec	Hor. 1/8314 Ver. 1/8313	major 17.8 mm azm. 90 deg minor 17.8 mm
Vector: 1-4 weight= 1.00 298.411 -0.748 316 39 40.4	7.3 7.3 5.0sec	Hor. 1/41033 Ver. 1/41030	major 17.8 mm azm. 90 deg minor 17.8 mm
Vector: 1-3 weight= 1.00 260.592 -0.706 315 59 58.4	8.9 8.9 7.0sec	Hor. 1/29394 Ver. 1/29392	major 21.7 mm azm. 90 deg minor 21.7 mm
Vector: 2-4 weight= 1.00 238.116 -0.302 315 50 54.2	7.3 7.3 6.3sec	Hor. 1/32640 Ver. 1/32637	major 17.9 mm azm. 91 deg minor 17.9 mm
Vector: FAGA-1 weight= 1.00 46616.820 125.373 116 20 16.3	21.6 21.6 0.1sec	Hor. 1/2161940 Ver. 1/2161061	major 52.8 mm azm. 0 deg minor 52.7 mm
Vector: SFGH-1 weight= 1.00 31921.859 20.597 223 49 04.7	21.5 21.6 0.1sec	Hor. 1/1481381 Ver. 1/1479833	major 52.8 mm azm. 0 deg minor 52.7 mm

Desired Network Accuracy was met for all Vectors

