



GEORREFERENCIACION RIO SAN JUAN MUNICIPIO DE SAN PEDRO - ANTIOQUIA (COLOMBIA)

PUNTO ANTENA MEDE

Project Summary

Project name: **Sanpe.ttp**

Surveyor:

Comment:

Linear unit: **Meters**

Projection: **Oeste**

Geoid:

Adjustment Summary

Adjustment type: **Plane + Height, Minimal constraint**

Confidence level: **95 %**

Number of adjusted points: **2**

Number of plane control points: **1**

Number of used GPS vectors: **1**

A posteriori UWE: **1** , Bounds: (**1** , **1**)

Number of height control points: **1**

TABLA DE OBSERVACIONES Y AJUSTES

| Used GPS Observations | | | | | | | | |
|---------------------------|-------------------|------------------|---------------|---------------------|------------------|-------------------------|--------------------------|---------------|
| Name | Azimuth | Distance (m) | dN (m) | dE (m) | dHt (m) | Horz RMS (m) | Vert RMS (m) | |
| GPS-6-MEDE | 158°43'10,1245" | 247840,717 | -230836,741 | 90287,992 | 1398,448 | 0,057 | 0,052 | |
| GPS Observations | | | | | | | | |
| Name | CorrXY | CorrXZ | CorrYZ | Start Time | Duration | Base Antenna Height (m) | Rover Antenna Height (m) | |
| GPS-6-MEDE | 0,1900 | 0,2559 | -0,3211 | 24/01/2012 14:49:00 | 07:54:15 | 1,432 | 0,000 | |
| GPS Observation Residuals | | | | | | | | |
| Name | dX (m) | dY (m) | dZ (m) | Elevation Angle | GPS Satellites | PDOP | VDOP | HDOP |
| GPS-6-MEDE | 94446,530 | -7878,723 | -229003,930 | -0°47'46,3296" | 17 | 2,634 | 2,392 | 1,104 |
| Control Points | | | | | | | | |
| Name | Grid Northing (m) | Grid Easting (m) | Elevation (m) | WGS84 Latitude | WGS84 Longitude | WGS84 Ell.Height (m) | Control | |
| GPS-6 | 1408360,073 | 1075583,945 | 154,973 | 8°17'17,57355"N | 76°23'29,12169"W | 154,973 | None | |
| MEDE | 1177523,333 | 1165871,937 | 1553,421 | 6°11'57,85708"N | 75°34'44,09902"W | 1553,421 | Both | |
| Adjusted Points | | | | | | | | |
| Name | Convergence | X (m) | Y (m) | Z (m) | Std Dev n (m) | Std Dev e (m) | Std Dev Hz (m) | Std Dev u (m) |
| GPS-6 | 0°05'56,0606" | 1485161,943 | -6134905,105 | 913356,320 | 0,018 | 0,054 | 0,057 | 0,052 |
| MEDE | 0°09'42,7271" | 1579608,472 | -6142783,828 | 684352,390 | 0,000 | 0,000 | 0,000 | 0,000 |

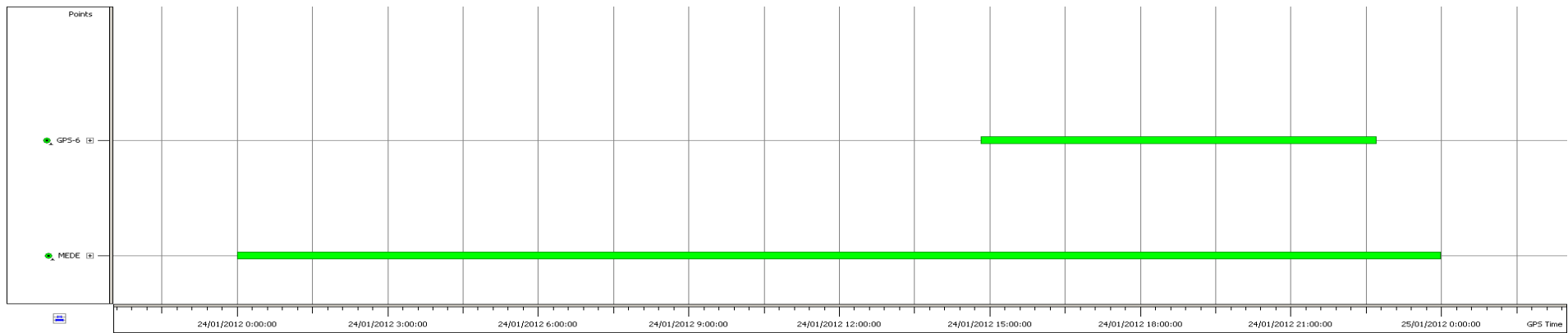


TABLA DE DURACION DE TIEMPOS PUNTOS MEDE GPS-6

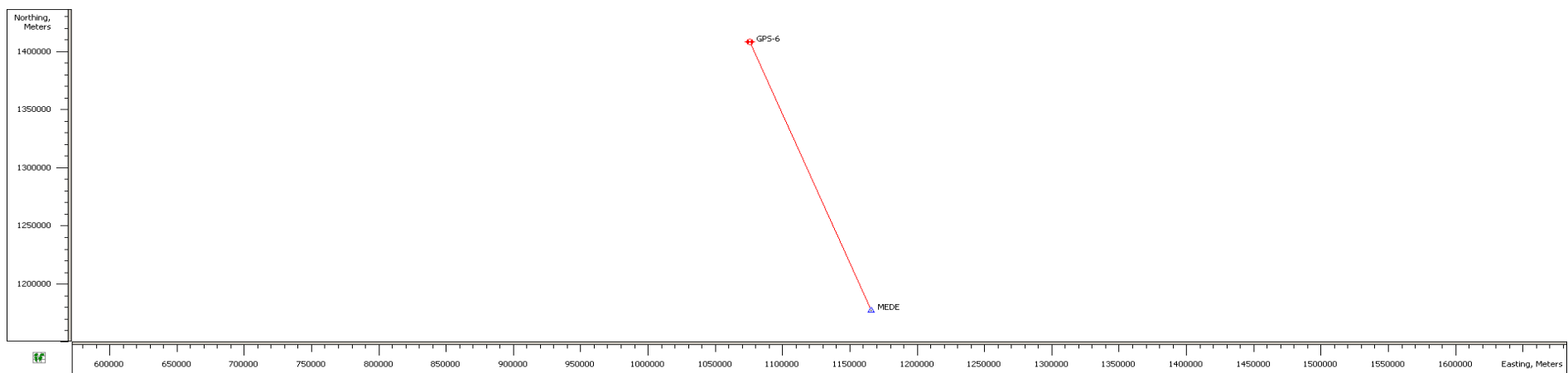


GRAFICO POSICIONAMIENTO PUNTOS MEDE, GPS-6

CUADRO DE COORDENADAS MAGNA-SIRGAS GAUSS-KRUGER ORIGEN OESTE PUNTOS MEDE Y GPS1

| Point Summary | | | | | | |
|----------------------|--------------------------|-------------------------|----------------------|-----------------------|------------------------|---------------------------------|
| Name | Grid Northing (m) | Grid Easting (m) | Elevation (m) | WGS84 Latitude | WGS84 Longitude | Altura Ortométrica (snm) |
| GPS-6 | 1408360,073 | 1075583,945 | 154,973 | 8°17'17,57355"N | 76°23'29,12169"W | 149,769 |
| MEDE | 1177523,333 | 1165871,937 | 1553,421 | 6°11'57,85708"N | 75°34'44,09902"W | 1528,637 |



GEORREFERENCIACION RIO SAN JUAN MUNICIPIO DE SAN PEDRO - ANTIOQUIA (COLOMBIA)

PUNTO ANTENA GPS 6

Project Summary

Project name: **Sanpe2.ttp**

Surveyor:

Comment:

Linear unit: **Meters**

Projection: **Oeste**

Geoid:

Adjustment Summary

Adjustment type: **Plane + Height, Minimal constraint**

Confidence level: **95 %**

Number of adjusted points: **5**

Number of plane control points: **1**

Number of used GPS vectors: **4**

A posteriori plane UWE: **1** , Bounds: (**1** , **1**)

Number of height control points: **1**

A posteriori height UWE: **1** , Bounds: (**1** , **1**)

TABLA DE OBSERVACIONES Y AJUSTES

| Used GPS Observations | | | | | | | | |
|---------------------------|-----------------|--------------|----------|---------------------|----------------|-------------------------|--------------------------|-------|
| Name | Azimuth | Distance (m) | dN (m) | dE (m) | dHt (m) | Horz RMS (m) | Vert RMS (m) | |
| GPS-1-GPS-6 | 324°22'17,4429" | 3071,214 | 2493,274 | -1793,553 | 4,640 | 0,010 | 0,017 | |
| GPS-2-GPS-6 | 322°26'29,1553" | 3003,283 | 2377,670 | -1835,005 | 4,559 | 0,024 | 0,037 | |
| GPS-3-GPS-6 | 324°35'04,2407" | 1562,670 | 1271,936 | -907,783 | 16,796 | 0,003 | 0,009 | |
| GPS-4-GPS-6 | 322°00'47,7729" | 1583,186 | 1246,091 | -976,598 | 15,276 | 0,012 | 0,041 | |
| GPS Observations | | | | | | | | |
| Name | CorrXY | CorrXZ | CorrYZ | Start Time | Duration | Base Antenna Height (m) | Rover Antenna Height (m) | |
| GPS-1-GPS-6 | -0,3408 | 0,4742 | -0,4580 | 24/01/2012 12:52:00 | 00:40:15 | 1,920 | 1,432 | |
| GPS-2-GPS-6 | -0,5056 | 0,6028 | -0,4399 | 24/01/2012 13:28:30 | 00:23:15 | 1,737 | 1,432 | |
| GPS-3-GPS-6 | -0,7160 | 0,4293 | -0,6335 | 24/01/2012 17:02:15 | 00:21:00 | 1,472 | 1,432 | |
| GPS-4-GPS-6 | -0,4203 | 0,3429 | -0,7351 | 24/01/2012 16:56:15 | 00:29:45 | 1,400 | 1,432 | |
| GPS Observation Residuals | | | | | | | | |
| Name | dX (m) | dY (m) | dZ (m) | Elevation Angle | GPS Satellites | PDOP | VDOP | HDOP |
| GPS-1-GPS-6 | -1822,348 | -76,407 | 2470,944 | 0°04'21,7385" | 9 | 2,123 | 1,821 | 1,092 |
| GPS-2-GPS-6 | -1858,936 | -102,284 | 2356,608 | 0°04'24,3781" | 8 | 2,115 | 1,776 | 1,147 |
| GPS-3-GPS-6 | -919,356 | -50,986 | 1262,585 | 0°36'31,6346" | 7 | 3,188 | 3,005 | 1,062 |
| GPS-4-GPS-6 | -985,760 | -69,334 | 1236,911 | 0°32'44,5445" | 6 | 5,079 | 4,894 | 1,357 |

| Control Points | | | | | | | | |
|-----------------|-------------------|------------------|---------------|-----------------|------------------|----------------------|----------------|---------------|
| Name | Grid Northing (m) | Grid Easting (m) | Elevation (m) | WGS84 Latitude | WGS84 Longitude | WGS84 Ell.Height (m) | Control | |
| GPS-1 | 1405866,799 | 1077377,498 | 150,333 | 8°15'56,32033"N | 76°22'30,65932"W | 150,333 | None | |
| GPS-2 | 1405982,403 | 1077418,950 | 150,414 | 8°16'00,08063"N | 76°22'29,29825"W | 150,414 | None | |
| GPS-3 | 1407088,137 | 1076491,728 | 138,177 | 8°16'36,12311"N | 76°22'59,53150"W | 138,177 | None | |
| GPS-4 | 1407113,982 | 1076560,543 | 139,697 | 8°16'36,96040"N | 76°22'57,28147"W | 139,697 | None | |
| GPS-6 | 1408360,073 | 1075583,945 | 154,973 | 8°17'17,57353"N | 76°23'29,12168"W | 154,973 | Both | |
| Adjusted Points | | | | | | | | |
| Name | Convergence | X (m) | Y (m) | Z (m) | Std Dev n (m) | Std Dev e (m) | Std Dev Hz (m) | Std Dev u (m) |
| GPS-1 | 0°06'03,5036" | 1486984,291 | -6134828,697 | 910885,375 | 0,008 | 0,007 | 0,010 | 0,017 |
| GPS-2 | 0°06'03,7450" | 1487020,879 | -6134802,821 | 910999,711 | 0,017 | 0,016 | 0,024 | 0,037 |
| GPS-3 | 0°05'59,8296" | 1486081,299 | -6134854,119 | 912093,734 | 0,002 | 0,002 | 0,003 | 0,009 |
| GPS-4 | 0°06'00,1636" | 1486147,703 | -6134835,771 | 912119,408 | 0,007 | 0,010 | 0,012 | 0,041 |
| GPS-6 | 0°05'56,0606" | 1485161,943 | -6134905,105 | 913356,319 | 0,000 | 0,000 | 0,000 | 0,000 |

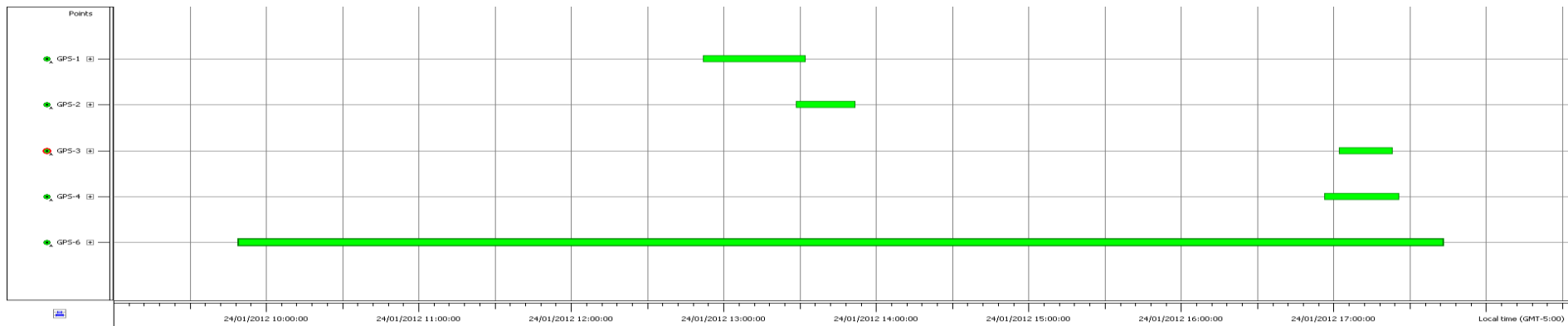


TABLA DE DURACION DE TIEMPOS PUNTOS GPS1, GPS2, GPS3, GPS4 Y GPS6.

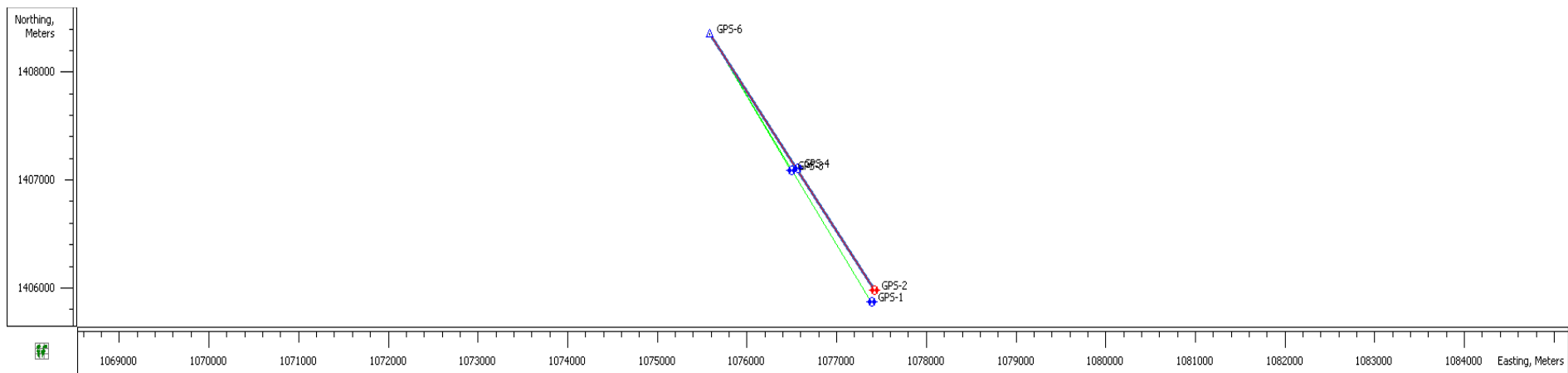


GRAFICO POSICIONAMIENTO PUNTOS GPS1, GPS2, GPS3, GPS4 Y GPS6.

CUADRO DE COORDENADAS MAGNA-SIRGAS GAUSS-KRUGER ORIGEN OESTE PUNTOS GPS1, GPS2, GPS3, GPS4 Y GPS6.

| Point Summary | | | | | | |
|----------------------|--------------------------|-------------------------|----------------------|-----------------------|------------------------|---------------------------------|
| Name | Grid Northing (m) | Grid Easting (m) | Elevation (m) | WGS84 Latitude | WGS84 Longitude | Altura Ortométrica (snm) |
| GPS-1 | 1405866,799 | 1077377,498 | 150,333 | 8°15'56,32033"N | 76°22'30,65932"W | 144,989 |
| GPS-2 | 1405982,403 | 1077418,950 | 150,414 | 8°16'00,08063"N | 76°22'29,29825"W | 145,070 |
| GPS-3 | 1407088,137 | 1076491,728 | 138,177 | 8°16'36,12311"N | 76°22'59,53150"W | 132,903 |
| GPS-4 | 1407113,982 | 1076560,543 | 139,697 | 8°16'36,96040"N | 76°22'57,28147"W | 134,423 |
| GPS-6 | 1408360,073 | 1075583,945 | 154,973 | 8°17'17,57353"N | 76°23'29,12168"W | 149,769 |



GEORREFERENCIACION RIO SAN JUAN MUNICIPIO DE SAN PEDRO - ANTIOQUIA (COLOMBIA)

PUNTO ANTENA GPS6

Project Summary

Project name: **Sanpe3.ttp**

Surveyor:

Comment:

Linear unit: **Meters**

Projection: **Oeste**

Geoid:

Adjustment Summary

Adjustment type: **Plane + Height, Minimal constraint**

Confidence level: **95 %**

Number of adjusted points: **2**

Number of plane control points: **1**

Number of used GPS vectors: **1**

A posteriori plane UWE: **1** , Bounds: (**1** , **1**)

Number of height control points: **1**

A posteriori height UWE: **1** , Bounds: (**1** , **1**)

TABLA DE OBSERVACIONES Y AJUSTES

| Used GPS Observations | | | | | | | | |
|---------------------------|-------------------|------------------|---------------|---------------------|------------------|-------------------------|--------------------------|---------------|
| Name | Azimuth | Distance (m) | dN (m) | dE (m) | dHt (m) | Horz RMS (m) | Vert RMS (m) | |
| GPS-5-GPS-6 | 92°00'54,0305" | 96,733 | -3,222 | 96,315 | -8,433 | 0,003 | 0,004 | |
| GPS Observations | | | | | | | | |
| Name | CorrXY | CorrXZ | CorrYZ | Start Time | Duration | Base Antenna Height (m) | Rover Antenna Height (m) | |
| GPS-5-GPS-6 | -0,3959 | 0,4453 | -0,3879 | 24/01/2012 15:48:30 | 00:22:15 | 2,063 | 1,432 | |
| GPS Observation Residuals | | | | | | | | |
| Name | dX (m) | dY (m) | dZ (m) | Elevation Angle | GPS Satellites | PDOP | VDOP | HDOP |
| GPS-5-GPS-6 | 91,753 | 30,294 | -4,569 | -5°00'06,2377" | 10 | 1,905 | 1,678 | 0,903 |
| Control Points | | | | | | | | |
| Name | Grid Northing (m) | Grid Easting (m) | Elevation (m) | WGS84 Latitude | WGS84 Longitude | WGS84 Ell.Height (m) | Control | |
| GPS-5 | 1408363,295 | 1075487,630 | 163,406 | 8°17'17,68382"N | 76°23'32,26868"W | 163,406 | None | |
| GPS-6 | 1408360,073 | 1075583,945 | 154,973 | 8°17'17,57353"N | 76°23'29,12168"W | 154,973 | Both | |
| Adjusted Points | | | | | | | | |
| Name | Convergence | X (m) | Y (m) | Z (m) | Std Dev n (m) | Std Dev e (m) | Std Dev Hz (m) | Std Dev u (m) |
| GPS-5 | 0°05'55,6082" | 1485070,190 | -6134935,399 | 913360,888 | 0,002 | 0,002 | 0,003 | 0,005 |
| GPS-6 | 0°05'56,0606" | 1485161,943 | -6134905,105 | 913356,319 | 0,000 | 0,000 | 0,000 | 0,000 |

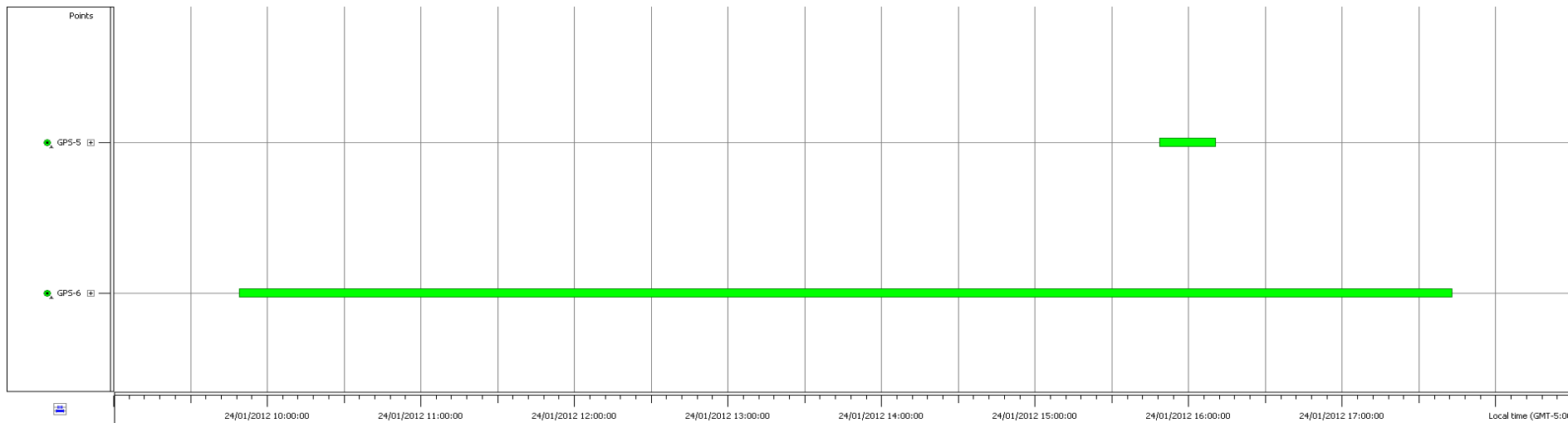


TABLA DE DURACION DE TIEMPOS PUNTOS GPS-5 GPS-6

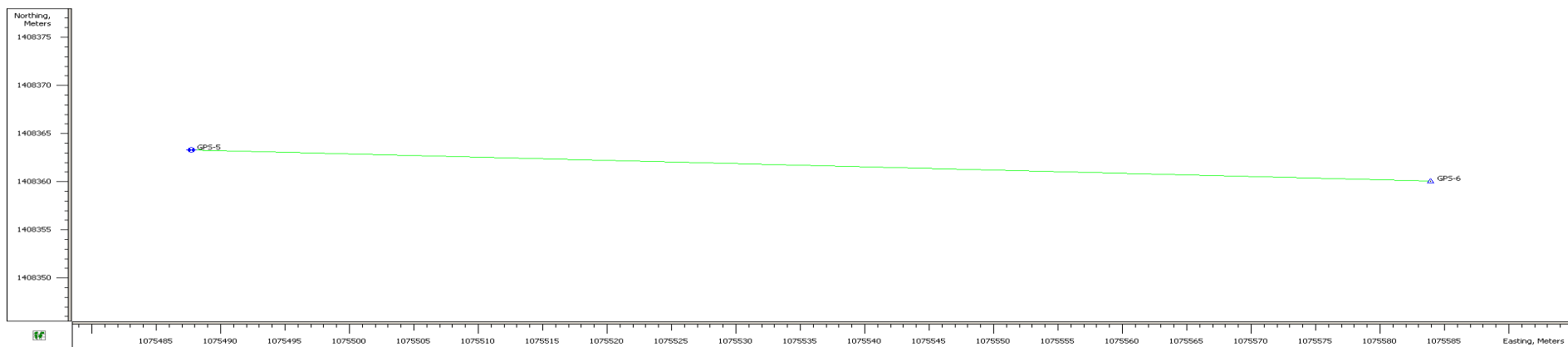


GRAFICO POSICIONAMIENTO PUNTOS GPS-5 GPS-6

CUADRO DE COORDENADAS MAGNA-SIRGAS GAUSS-KRUGER ORIGEN OESTE PUNTOS GPS-5 GPS-6

| Point Summary | | | | | | |
|----------------------|--------------------------|-------------------------|----------------------|-----------------------|------------------------|---------------------------------|
| Name | Grid Northing (m) | Grid Easting (m) | Elevation (m) | WGS84 Latitude | WGS84 Longitude | Altura Ortométrica (snm) |
| GPS-5 | 1408363,295 | 1075487,630 | 163,406 | 8°17'17,68382"N | 76°23'32,26868"W | 158,202 |
| GPS-6 | 1408360,073 | 1075583,945 | 154,973 | 8°17'17,57353"N | 76°23'29,12168"W | 149,769 |