

## General Information

### Mission Information

Project name	210401_A_5060420_nad2011_FINAL
Processing date	2021-04-09 13:14:13
Mission date	2021-04-01 15:07:57
Mission duration	05:55:16.000
Processing mode	IN-Fusion PP-RTX

### Rover Hardware Information

Product	POS AV 610 VER6 HW2.5-12
Serial number	S/N9825
IMU type	57
Receiver type	BD982
Antenna type	AV39

## Project File List

### Rover Data Files

File name	File type
survey3.pos	POS Data

### Input Files

File Name	File Type
Ephm0910.21g	GLONASS Broadcast Ephemeris
Ephm0910.21n	GPS Broadcast Ephemeris

### Output Files

Filename	File type
sbet_210401_A_5060420_nad2011_FINAL.out	SBET Trajectory File
sbet_210401_A_5060420_nad2011_FINAL.shp	Shapefile Export Output

## Rover Data Summary

First raw data file	survey3.pos		
Last raw data file	survey3.pos		
Start GPS week	2151		
Start time	400076.580 (04/01/2021 15:07:56)		
End time	421391.583 (04/01/2021 21:03:11)		
Start of fine alignment	400406.621 (04/01/2021 15:13:26)		
Available subsystems	Primary GNSS, IMU		
POS Event Input	None		
Correction data	None		
<b>IMU Installation Lever Arms &amp; Mounting Angles</b>			
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	0.205	-0.303	0.853
Reference to Primary GNSS lever arm std dev (m)	-1.000		
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

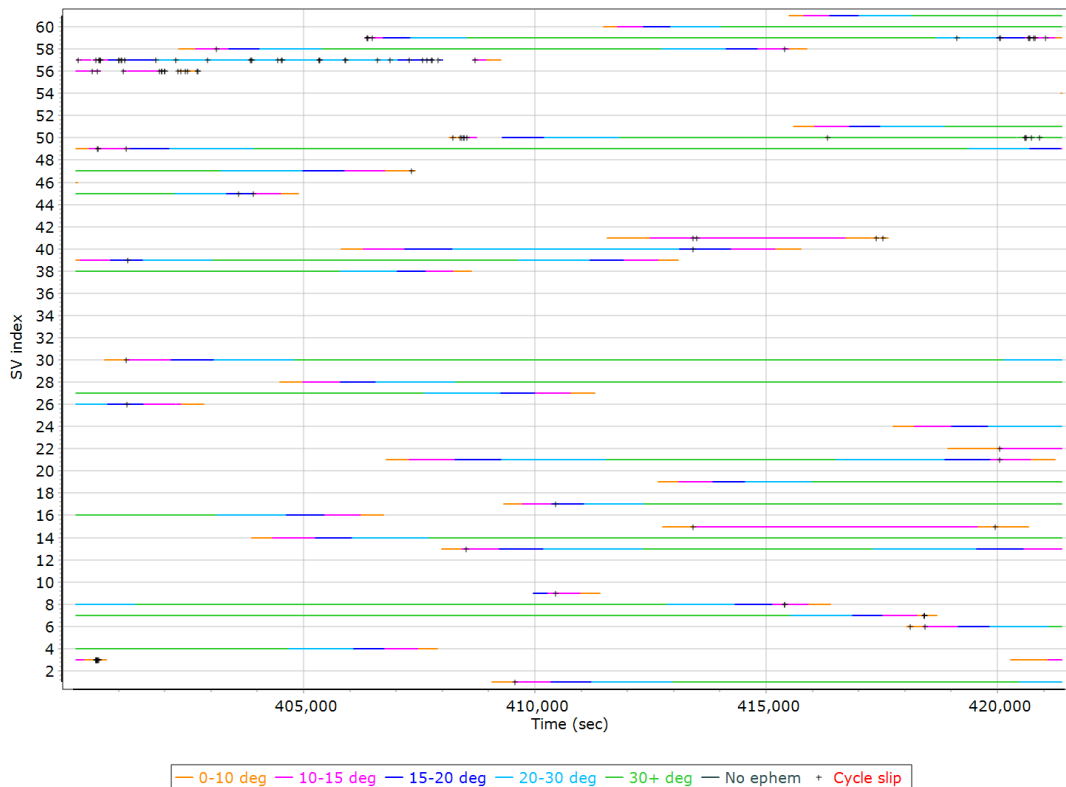
## Rover Data QC

### Raw IMU Import QC Summary

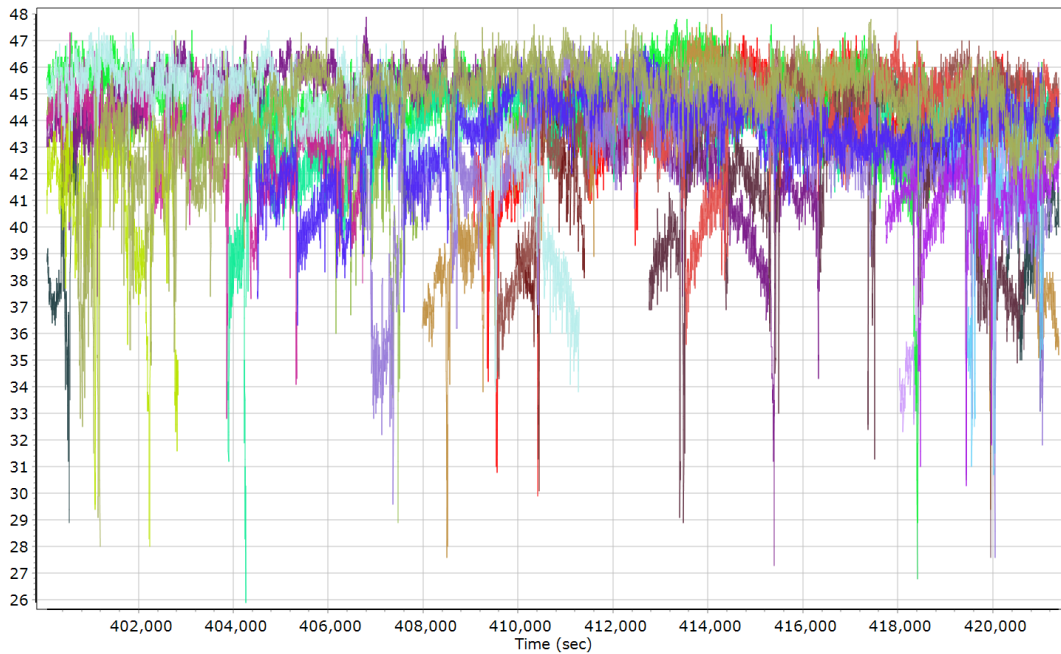
IMU data input file	imu_210401_A_5060420_nad2011_FINAL.dat
IMU data check log file	imudt_210401_A_5060420_nad2011_FINAL.log
IMU Records Processed	4262518
Termination Status	Normal
IMU Anomalies	0

## Primary Observables & Satellite Data

### GPS/GLONASS L1 Satellite Lock/Elevation

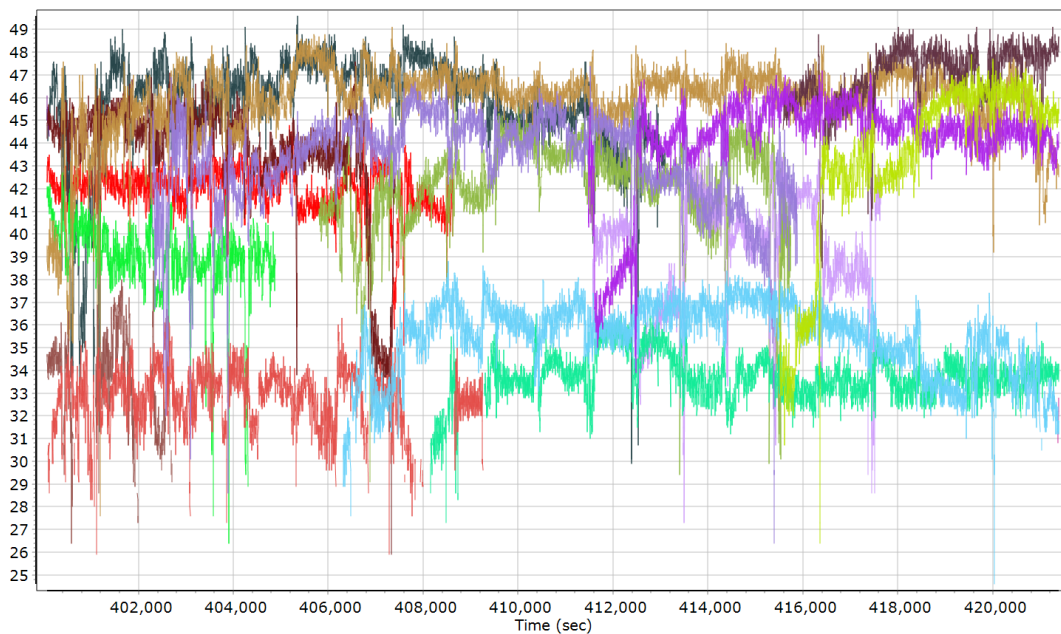


### GPS L1 SNR



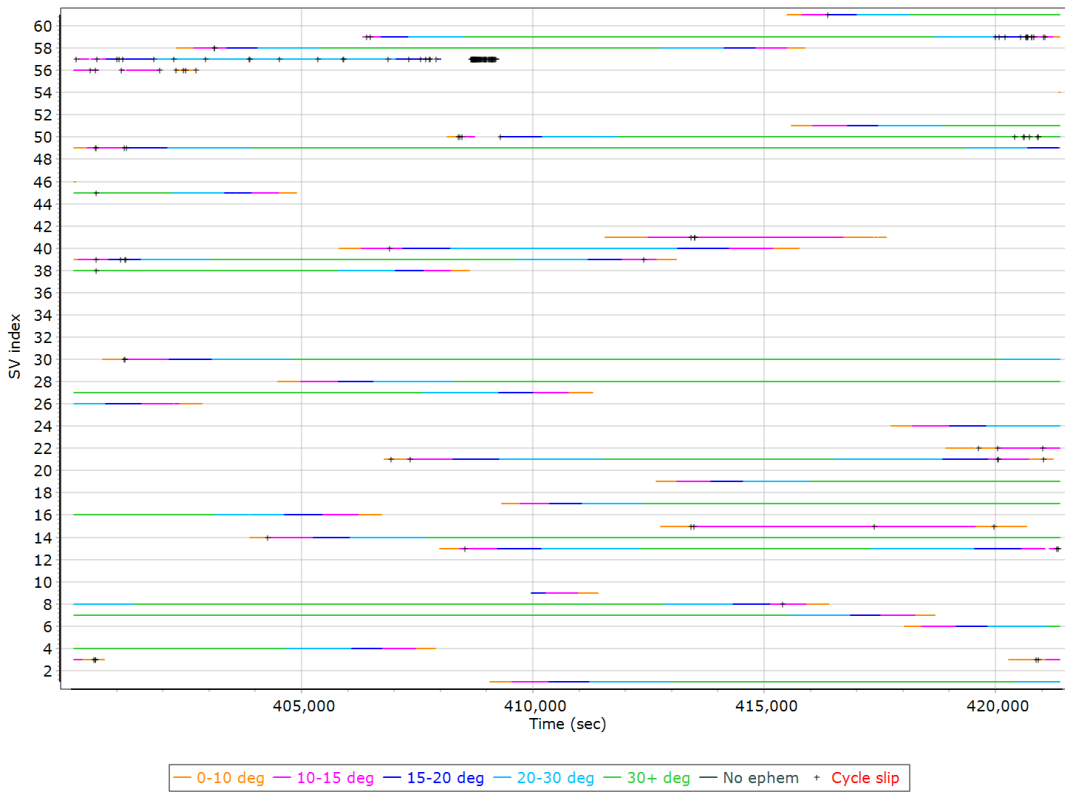
- |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|
| GPS PRN 01 L1 SNR (dB/Hz) | GPS PRN 03 L1 SNR (dB/Hz) | GPS PRN 04 L1 SNR (dB/Hz) | GPS PRN 06 L1 SNR (dB/Hz) |
| GPS PRN 07 L1 SNR (dB/Hz) | GPS PRN 08 L1 SNR (dB/Hz) | GPS PRN 09 L1 SNR (dB/Hz) | GPS PRN 13 L1 SNR (dB/Hz) |
| GPS PRN 14 L1 SNR (dB/Hz) | GPS PRN 15 L1 SNR (dB/Hz) | GPS PRN 16 L1 SNR (dB/Hz) | GPS PRN 17 L1 SNR (dB/Hz) |
| GPS PRN 19 L1 SNR (dB/Hz) | GPS PRN 21 L1 SNR (dB/Hz) | GPS PRN 22 L1 SNR (dB/Hz) | GPS PRN 24 L1 SNR (dB/Hz) |
| GPS PRN 26 L1 SNR (dB/Hz) | GPS PRN 27 L1 SNR (dB/Hz) | GPS PRN 28 L1 SNR (dB/Hz) | GPS PRN 30 L1 SNR (dB/Hz) |

### GLONASS L1 SNR

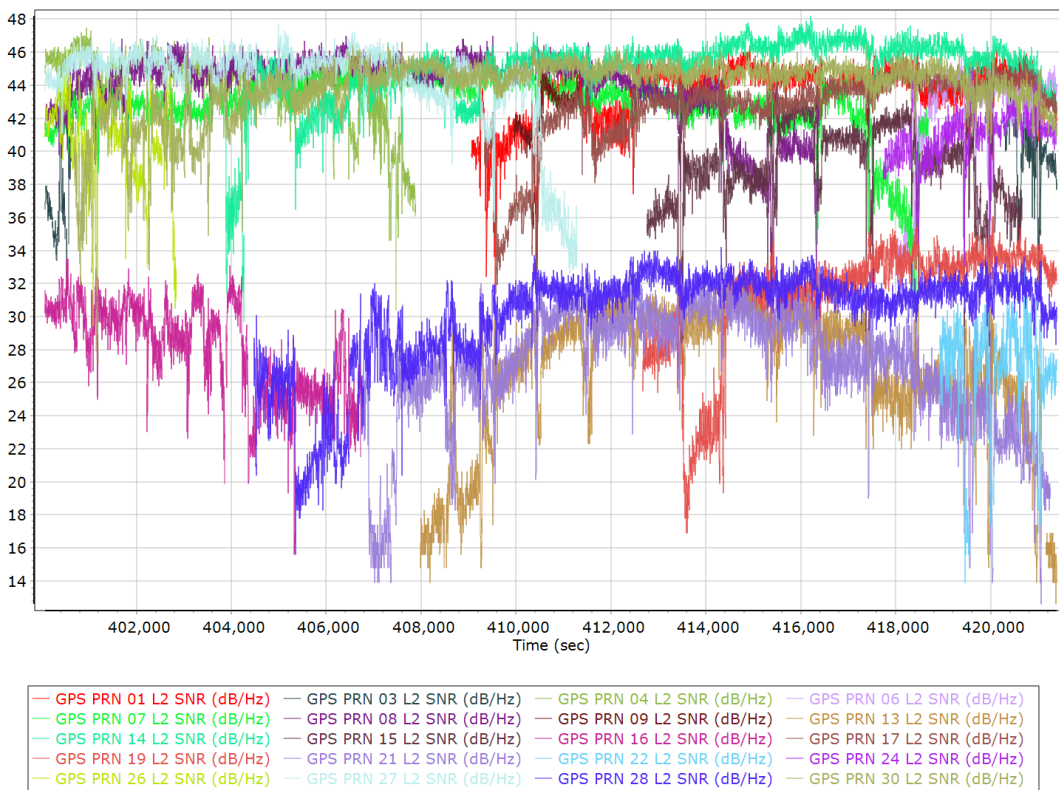


- |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|
| GLONASS 01 L1 SNR (dB/Hz) | GLONASS 02 L1 SNR (dB/Hz) | GLONASS 03 L1 SNR (dB/Hz) |
| GLONASS 04 L1 SNR (dB/Hz) | GLONASS 08 L1 SNR (dB/Hz) | GLONASS 09 L1 SNR (dB/Hz) |
| GLONASS 10 L1 SNR (dB/Hz) | GLONASS 12 L1 SNR (dB/Hz) | GLONASS 13 L1 SNR (dB/Hz) |
| GLONASS 14 L1 SNR (dB/Hz) | GLONASS 17 L1 SNR (dB/Hz) | GLONASS 19 L1 SNR (dB/Hz) |
| GLONASS 20 L1 SNR (dB/Hz) | GLONASS 21 L1 SNR (dB/Hz) | GLONASS 22 L1 SNR (dB/Hz) |
| GLONASS 23 L1 SNR (dB/Hz) | GLONASS 24 L1 SNR (dB/Hz) |                           |

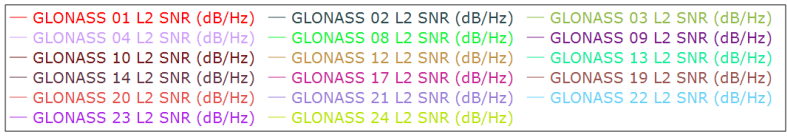
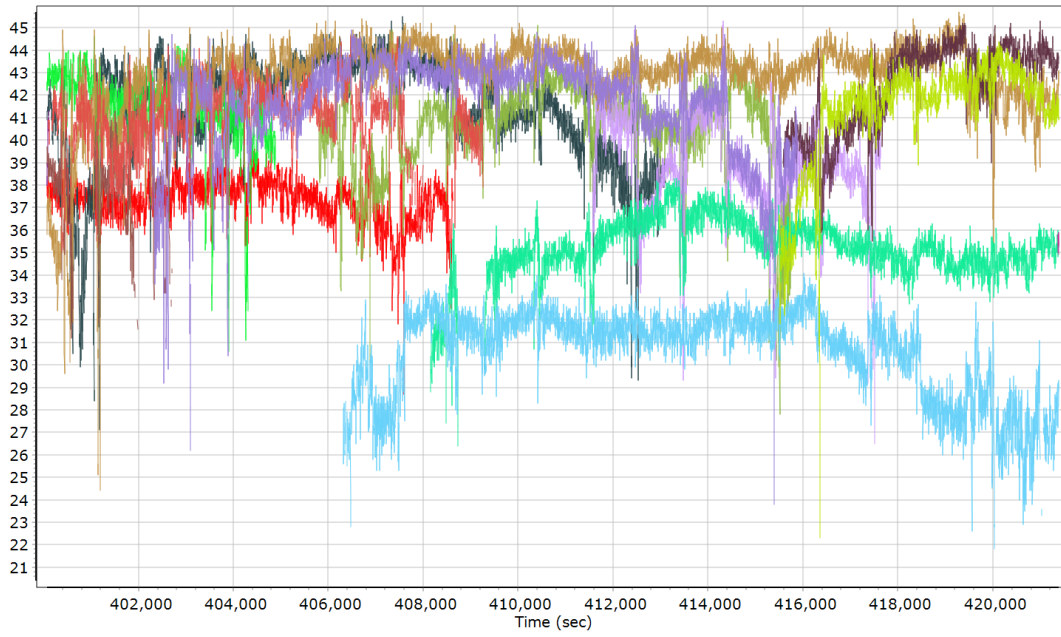
### GPS/GLONASS L2 Satellite Lock/Elevation



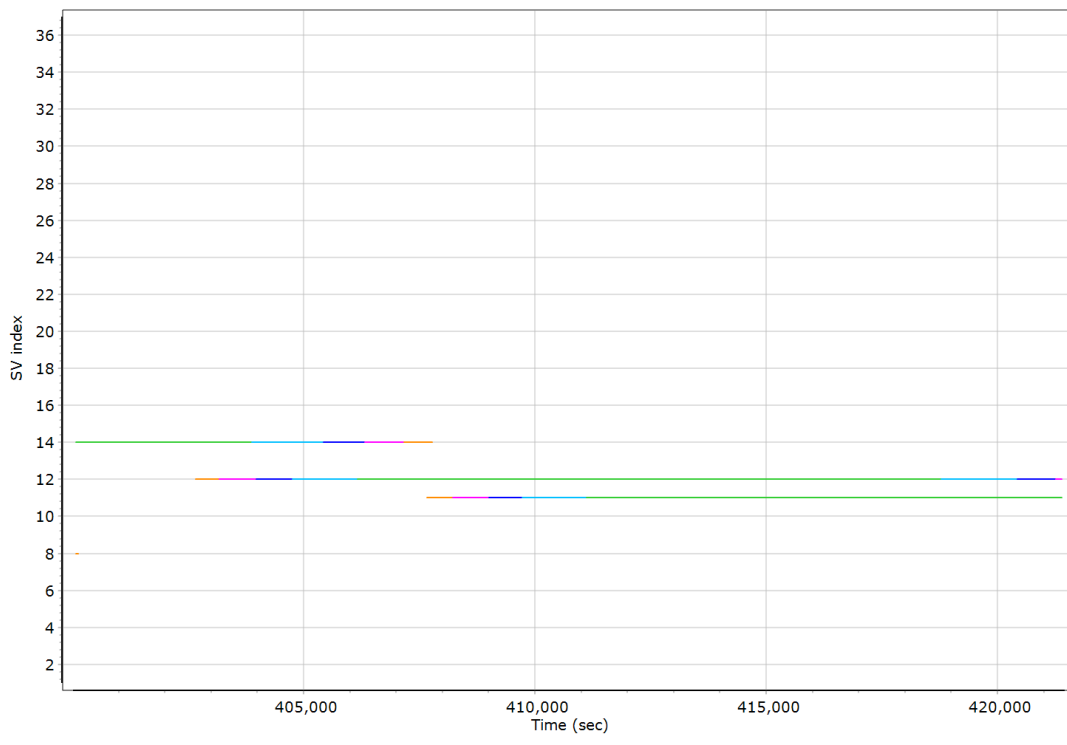
### GPS L2 SNR



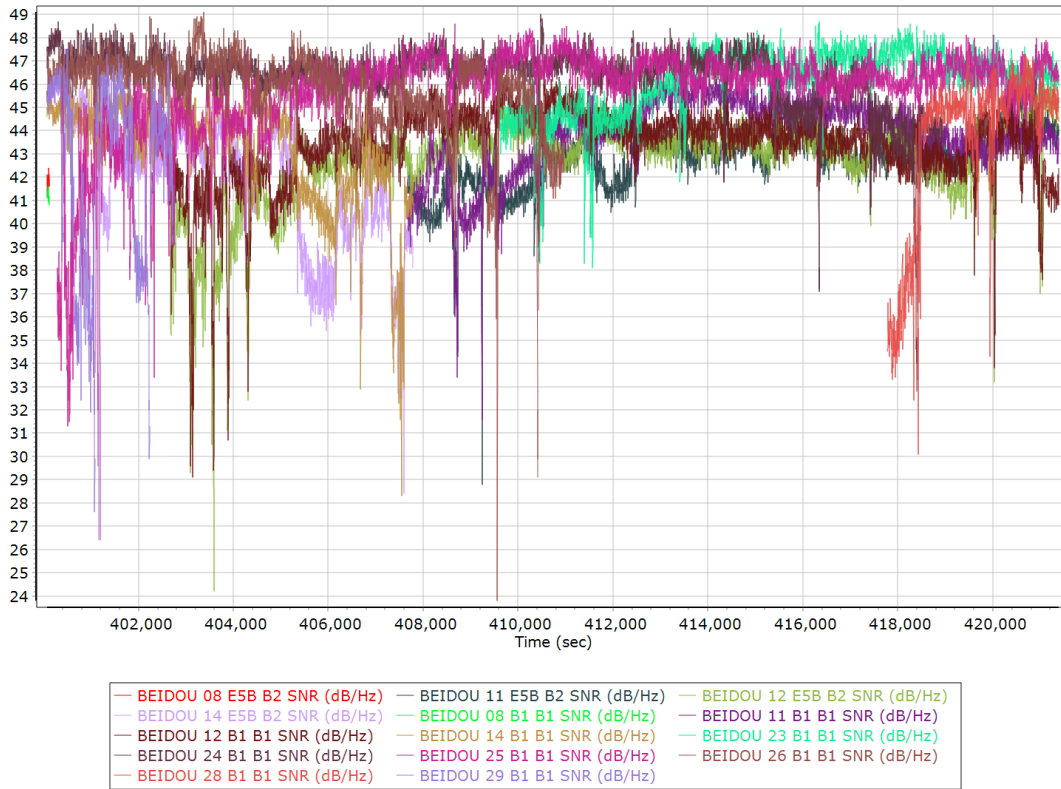
### GLONASS L2 SNR



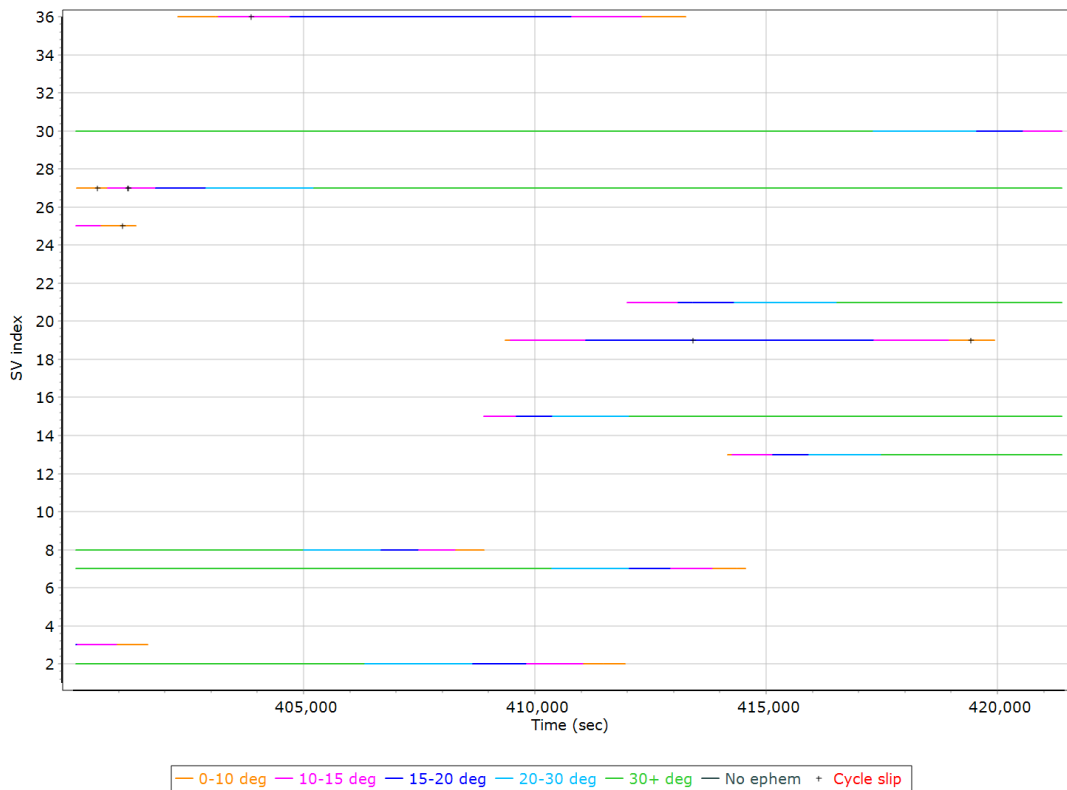
### BEIDOU Satellite Lock/Elevation



### BEIDOU SNR

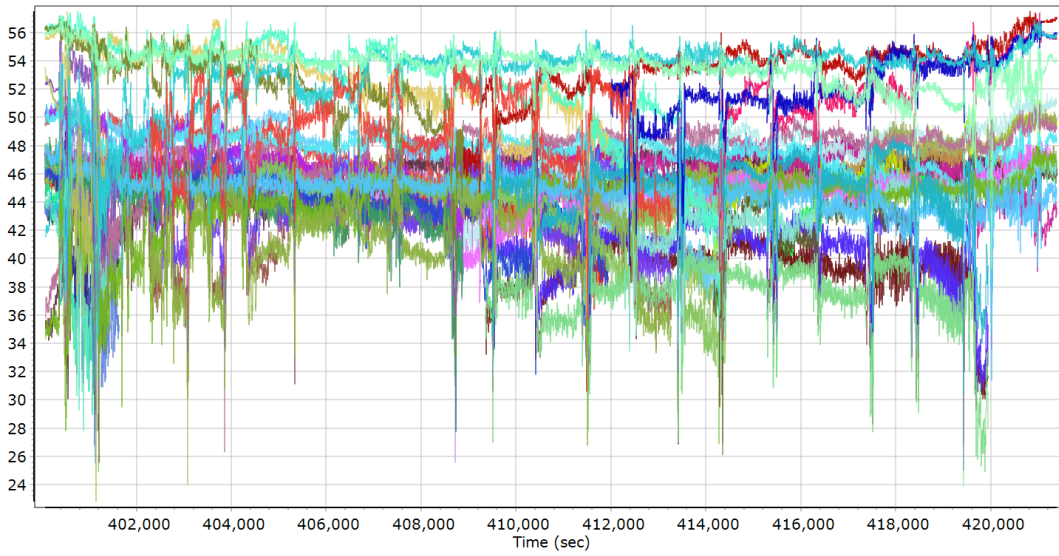


### GALILEO Satellite Lock/Elevation





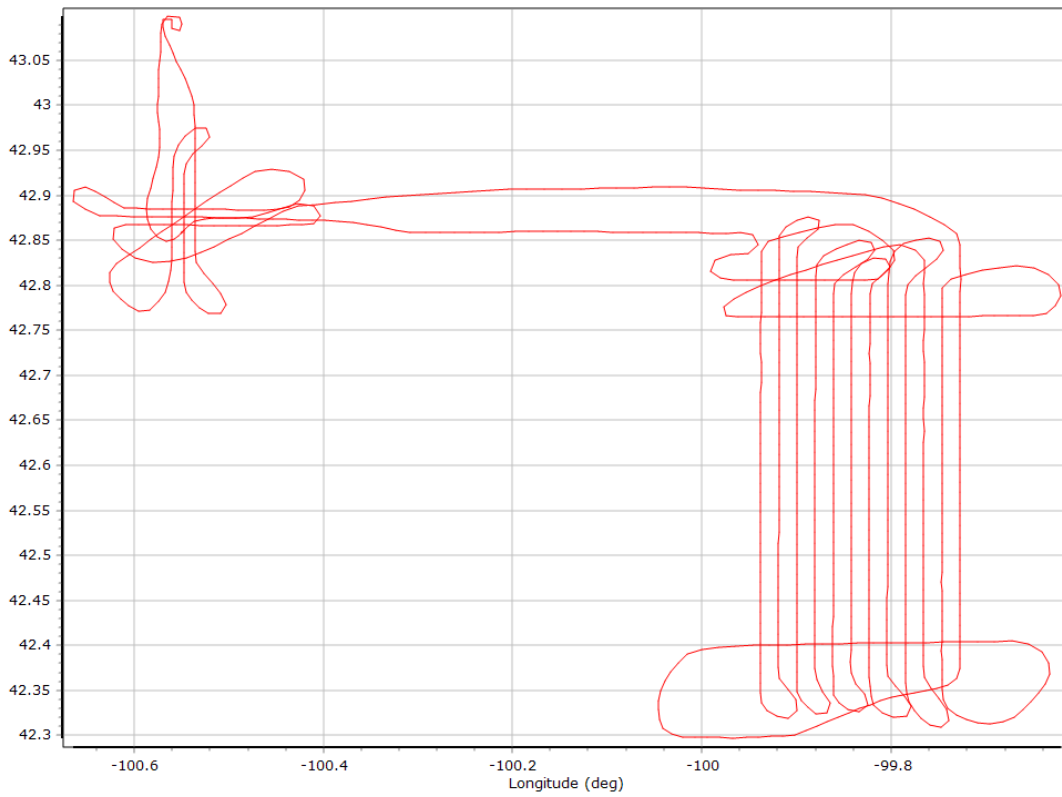
## GALILEO SNR



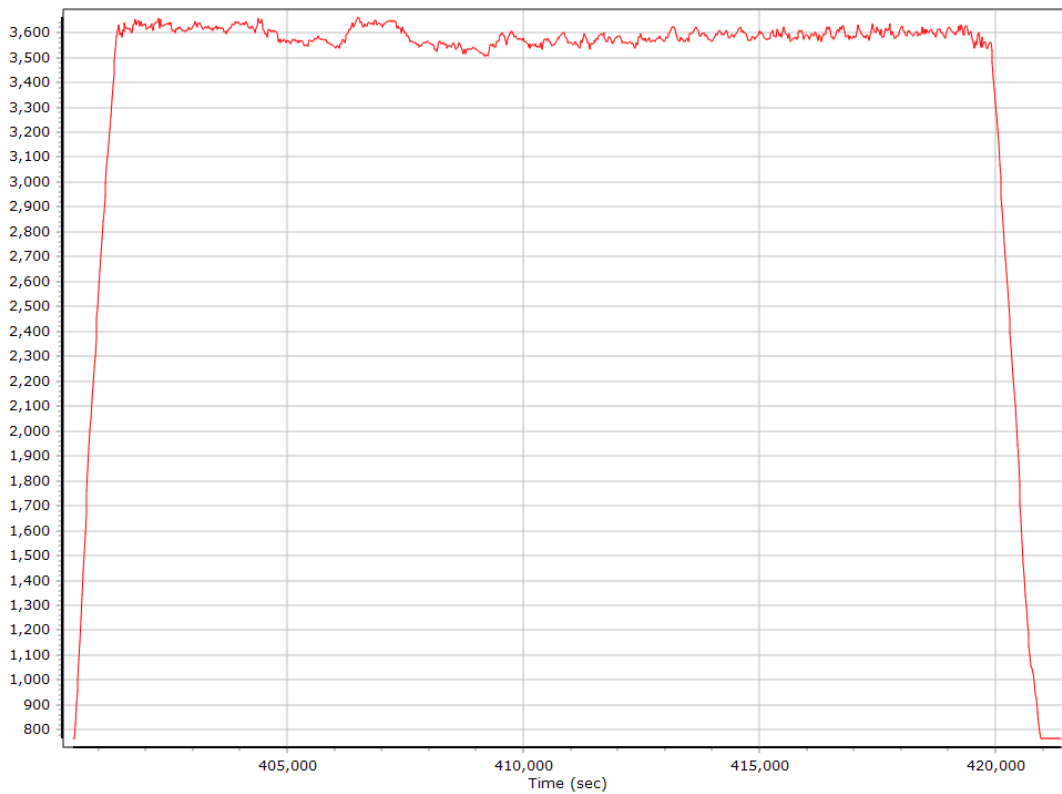
— GALILEO 02 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 03 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 07 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 08 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 13 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 15 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 19 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 21 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 25 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 27 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 30 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)	— GALILEO 36 L1 BOC_1_1_DP_MBOC SNR (dB/Hz)
— GALILEO 02 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 03 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 07 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 08 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 13 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 15 L5E5A BPSK10_PD SNR (dB/Hz)
— GALILEO 19 L5E5A BPSK10_PD SNR (dB/Hz)	— GALILEO 21 L5E5A BPSK10_PD SNR (dB/Hz)

## Smoothed Trajectory Information

### Top View



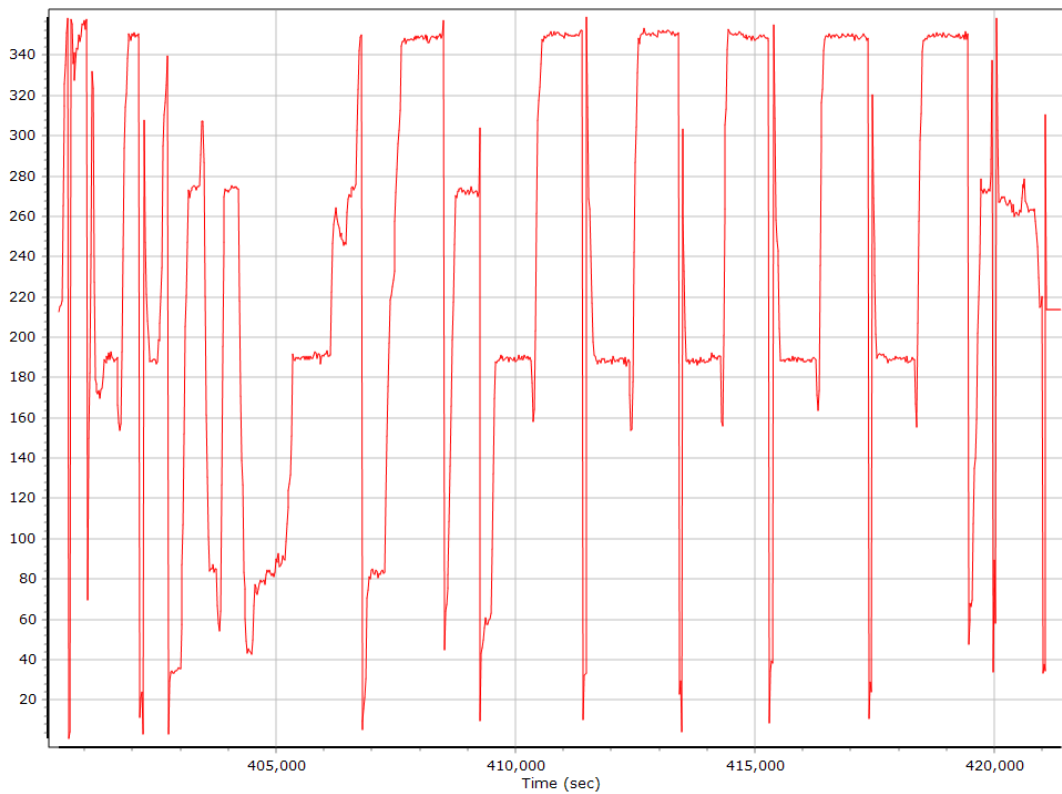
### Altitude



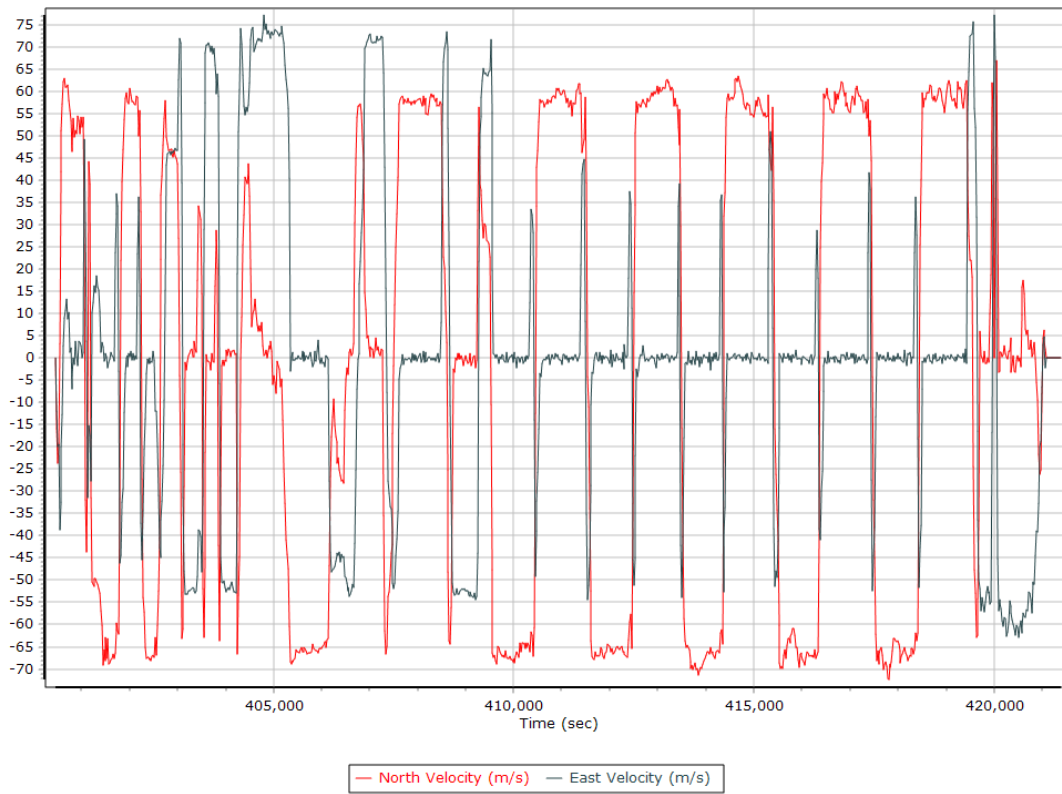
## Roll/Pitch



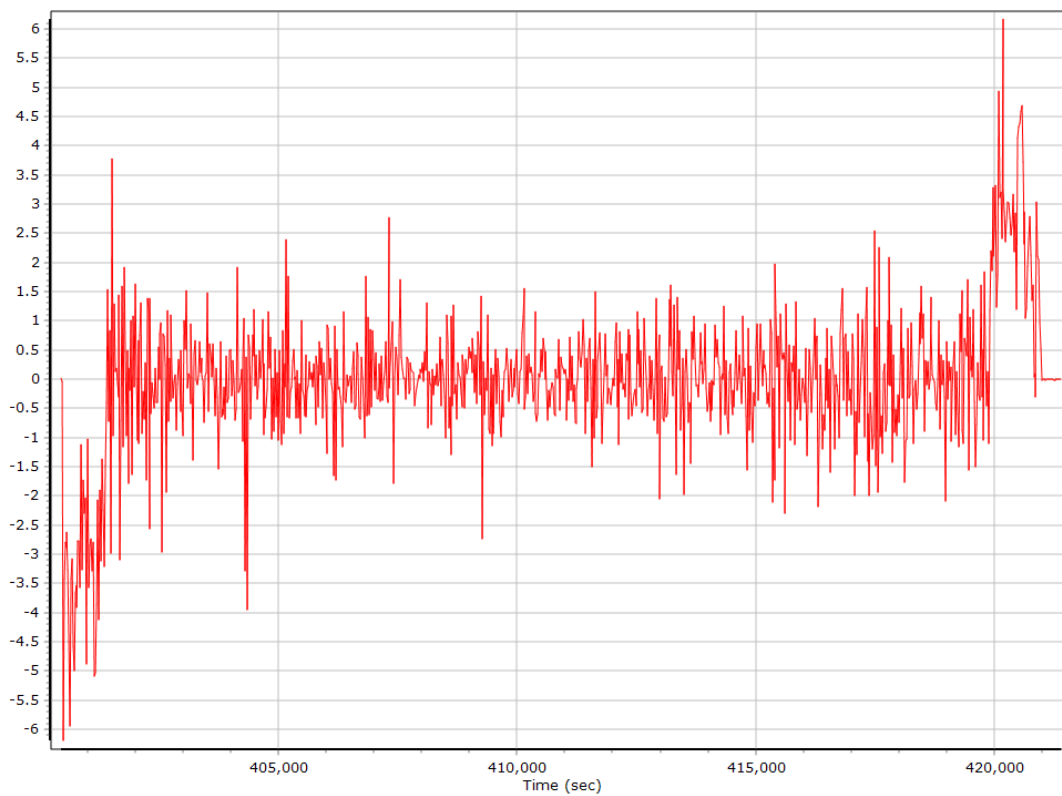
## Heading



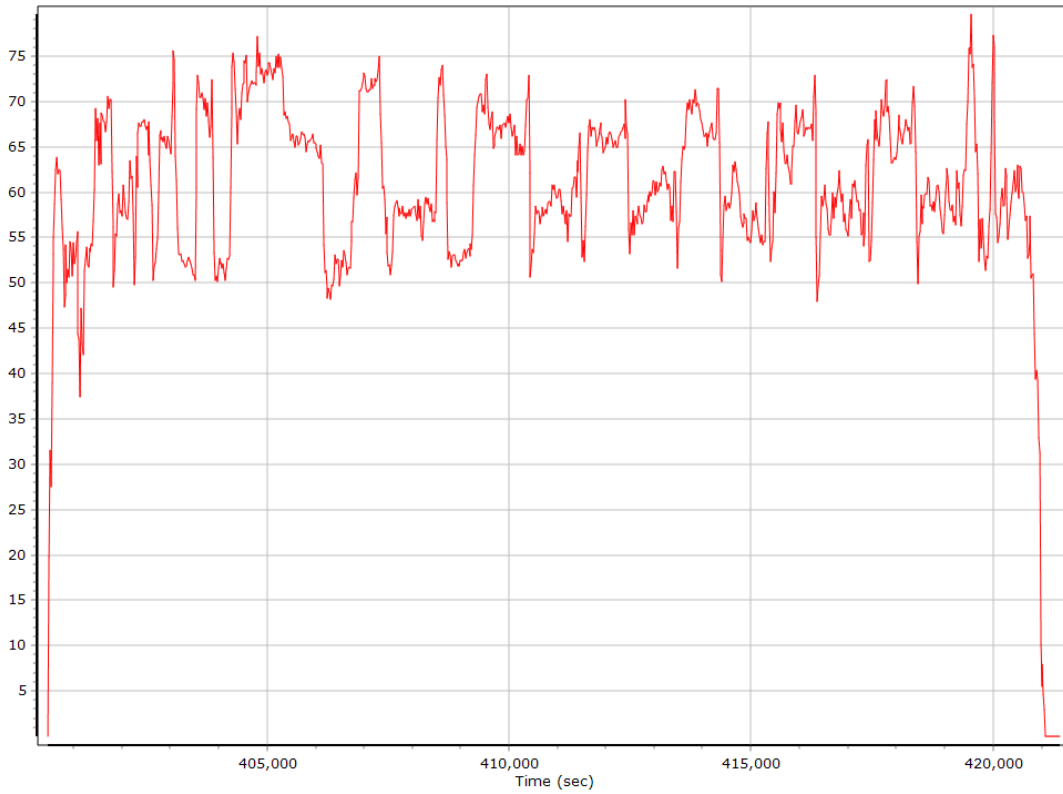
## North/East Velocity



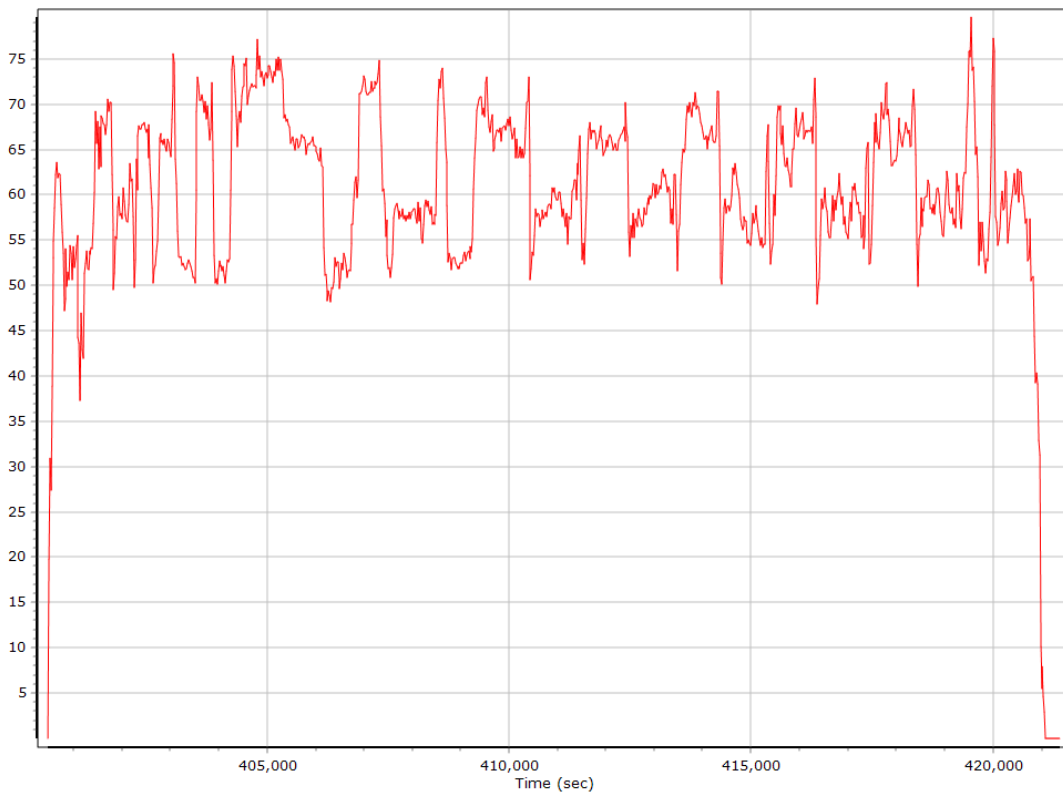
## Down Velocity



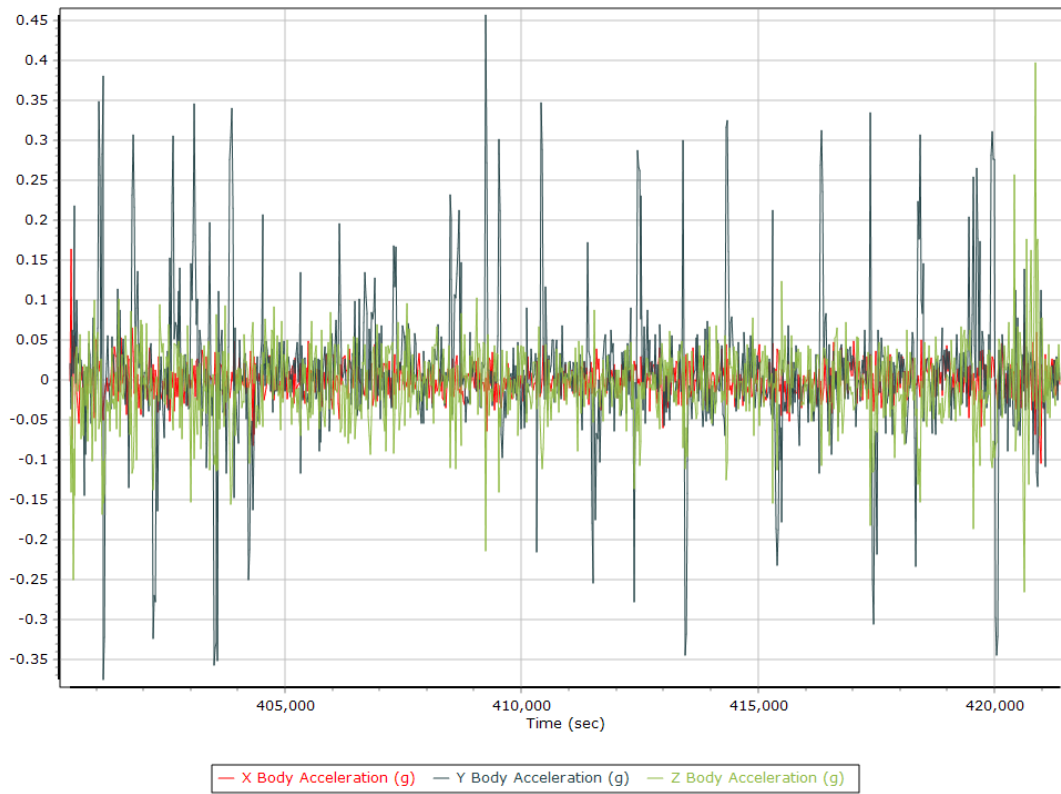
## Total Speed



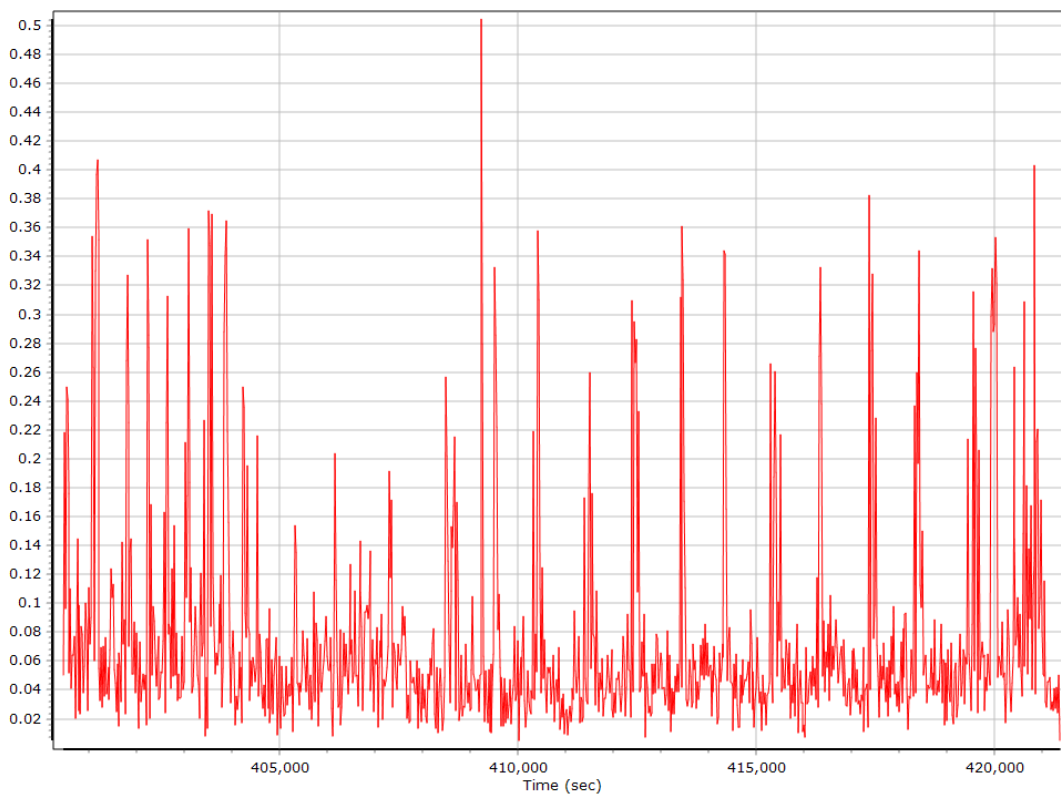
## Ground Speed



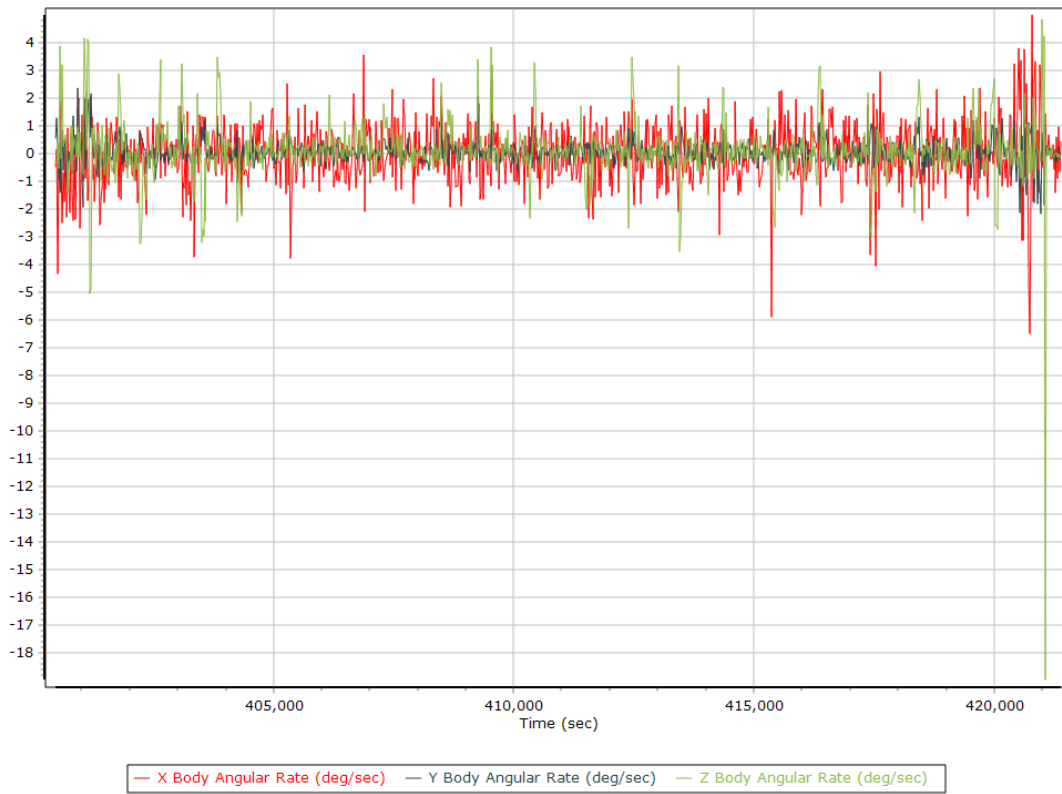
## Body Acceleration



## Total Body Acceleration

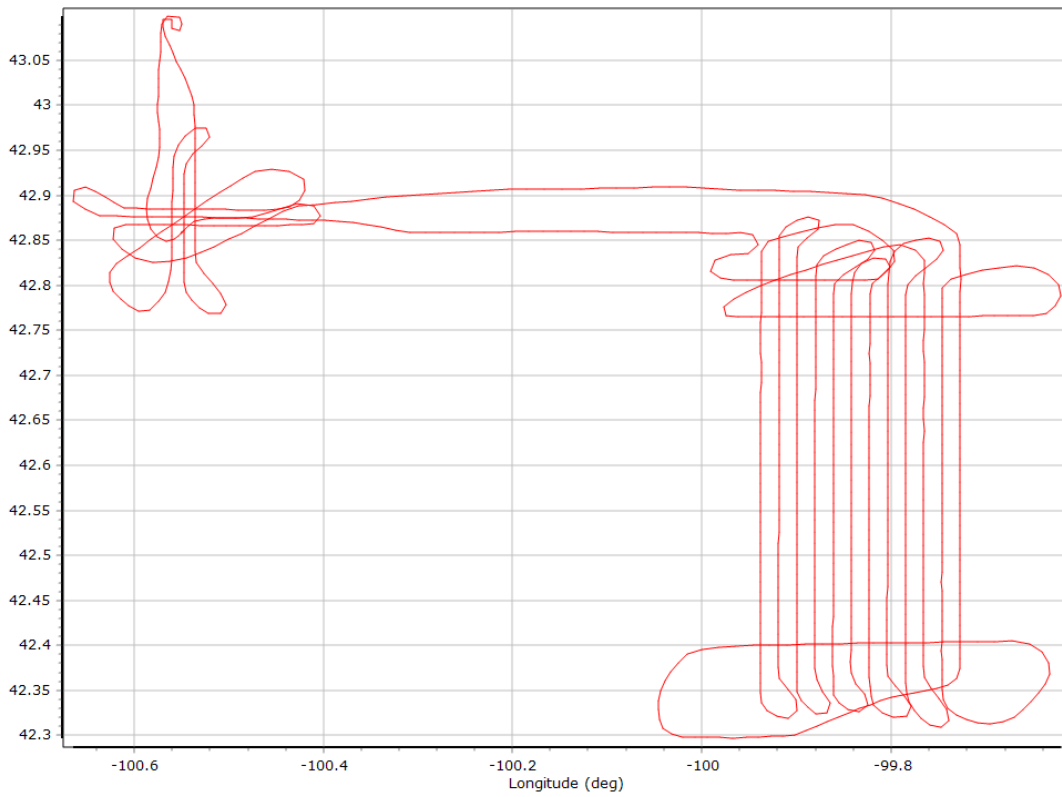


## Body Angular Rate

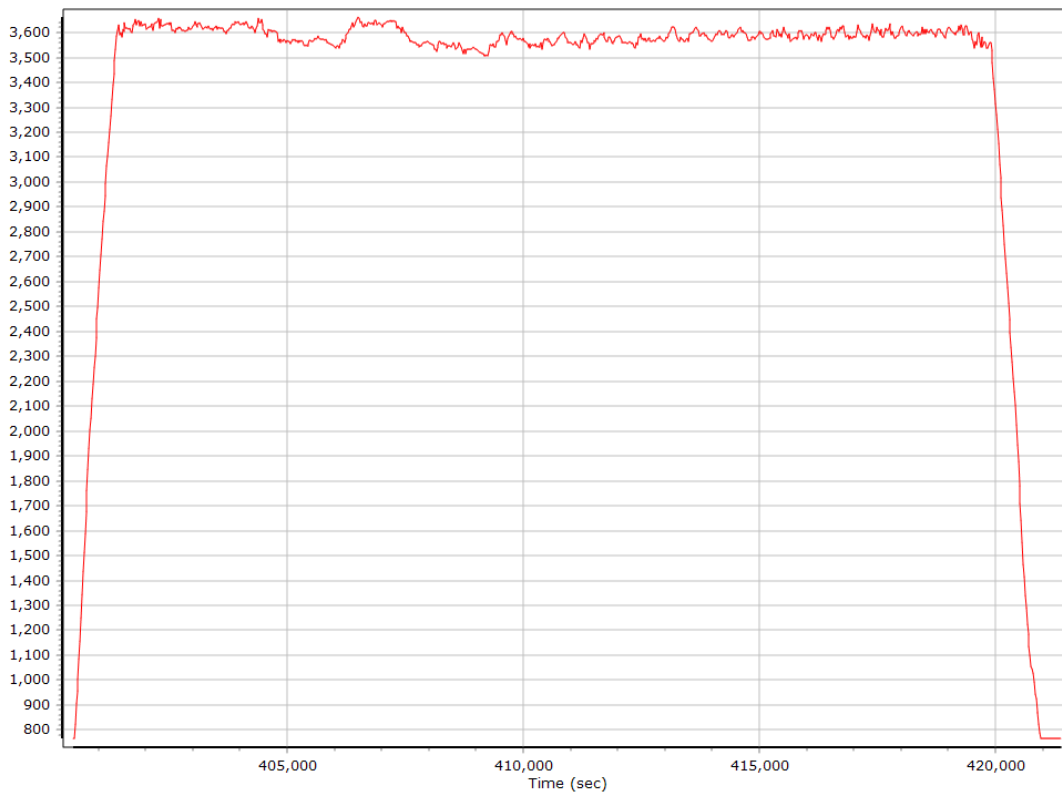


## Forward Processed Trajectory Information

### Top View

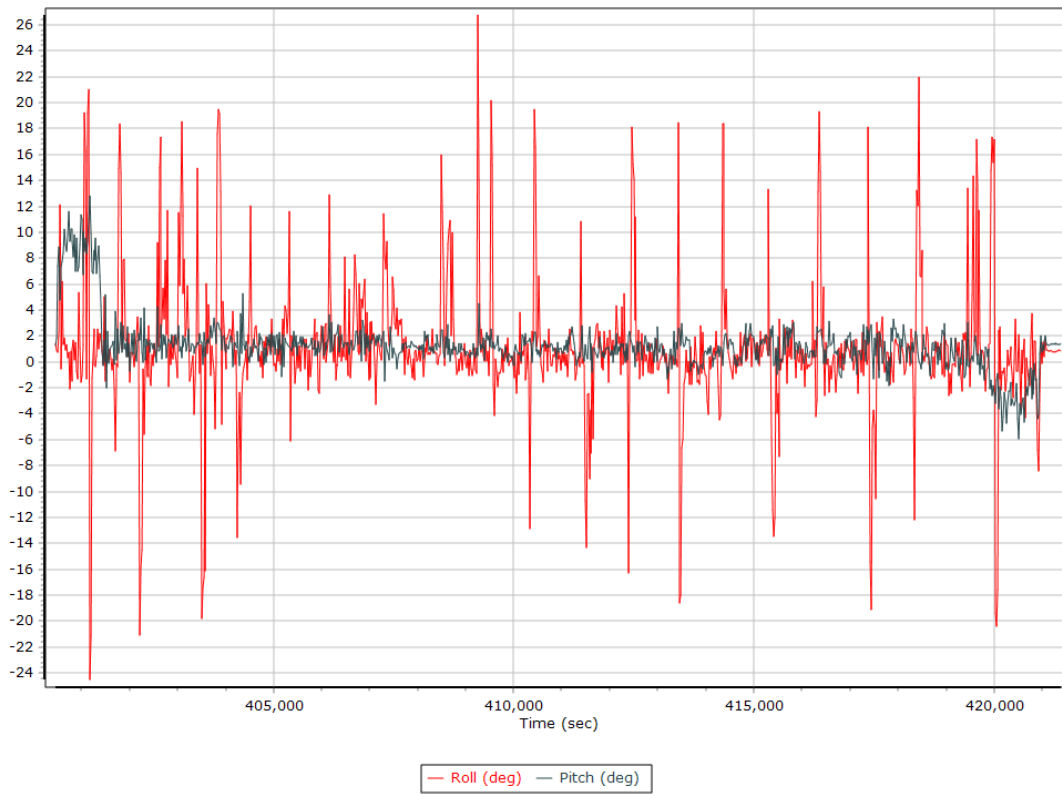


### Altitude

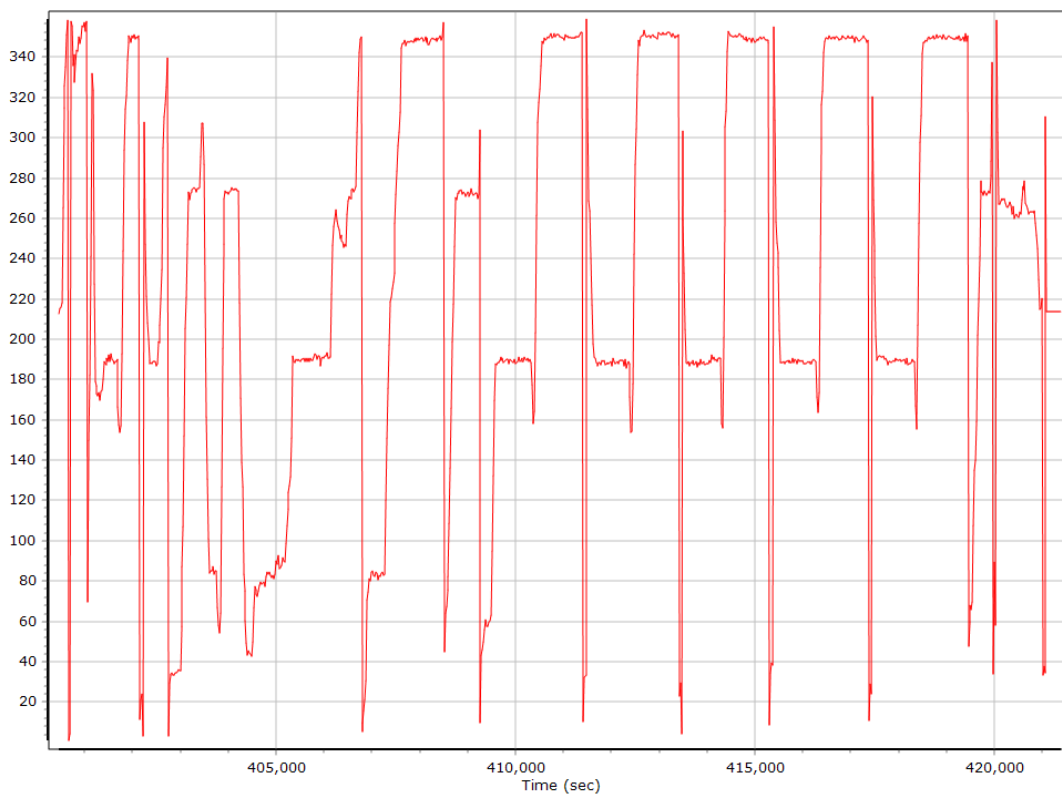




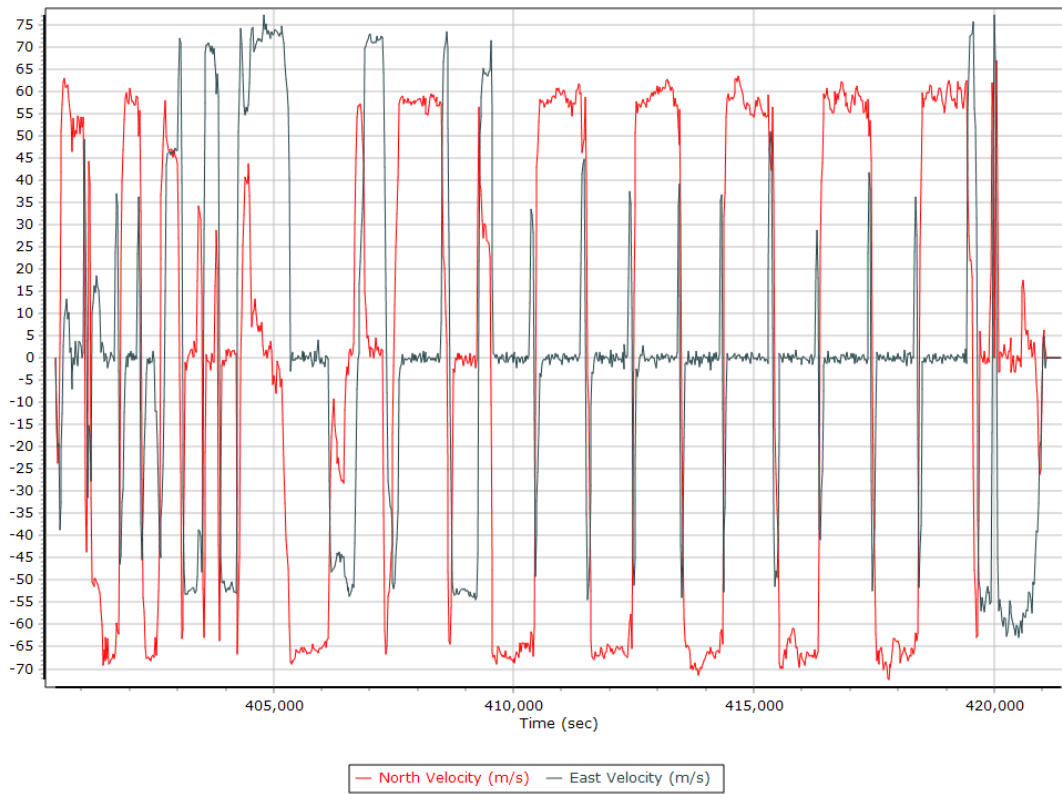
## Roll/Pitch



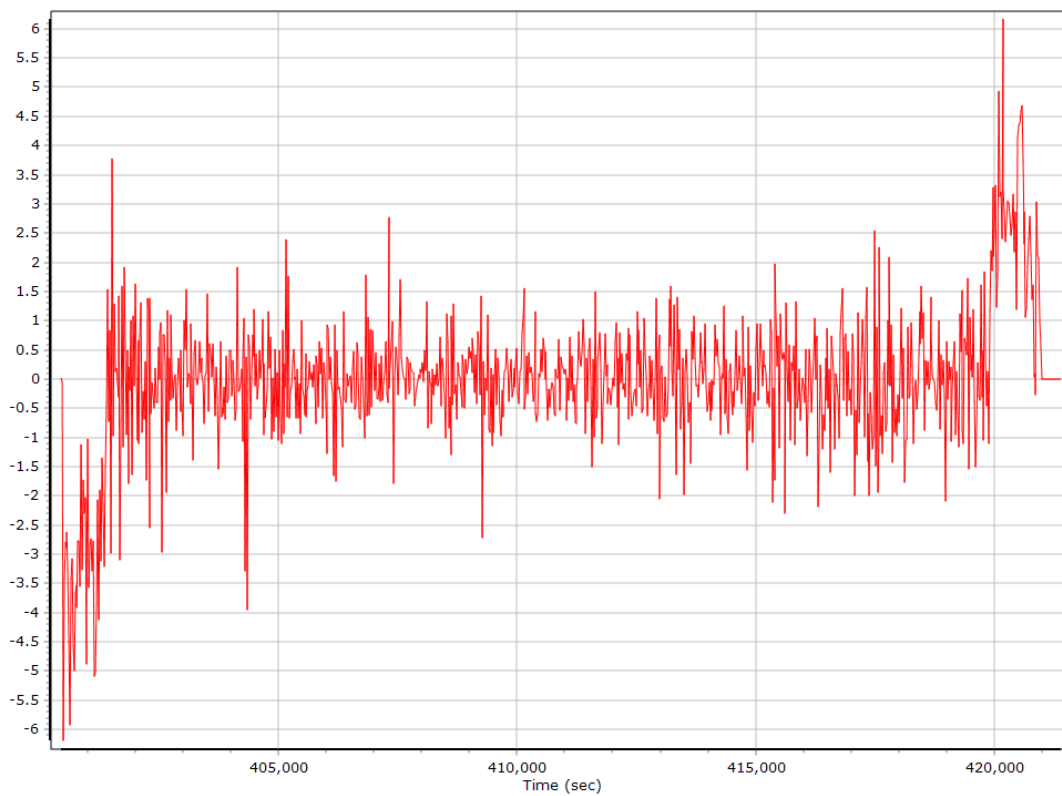
## Heading



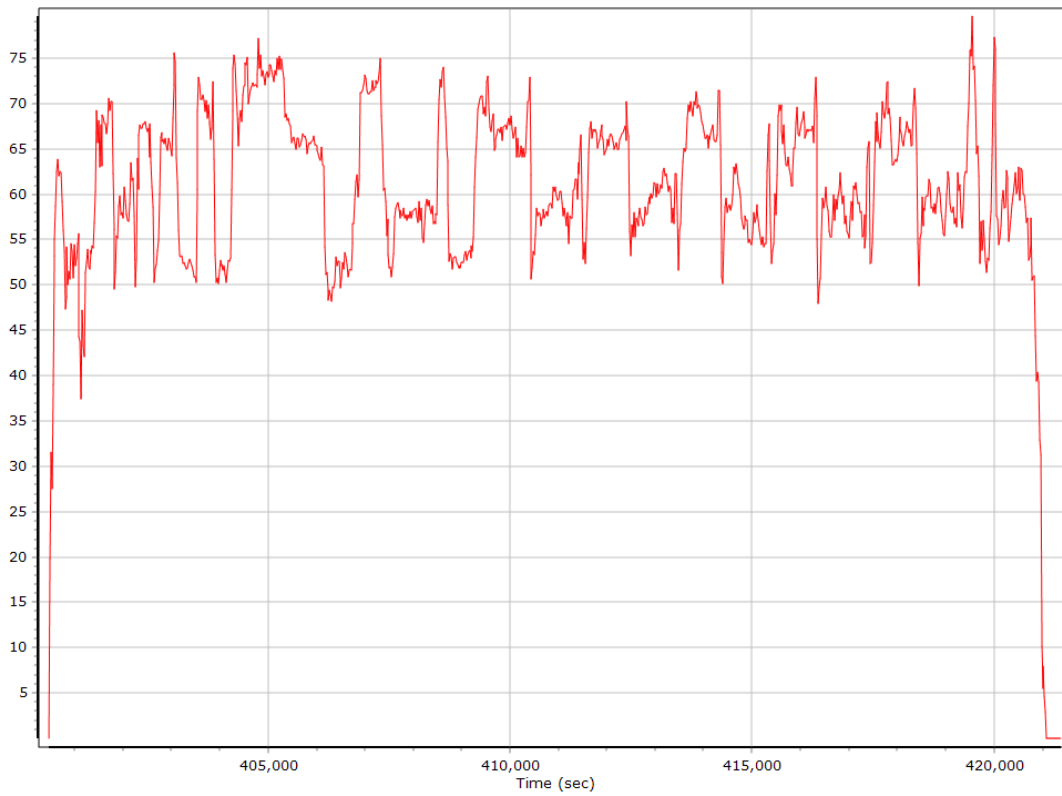
## North/East Velocity



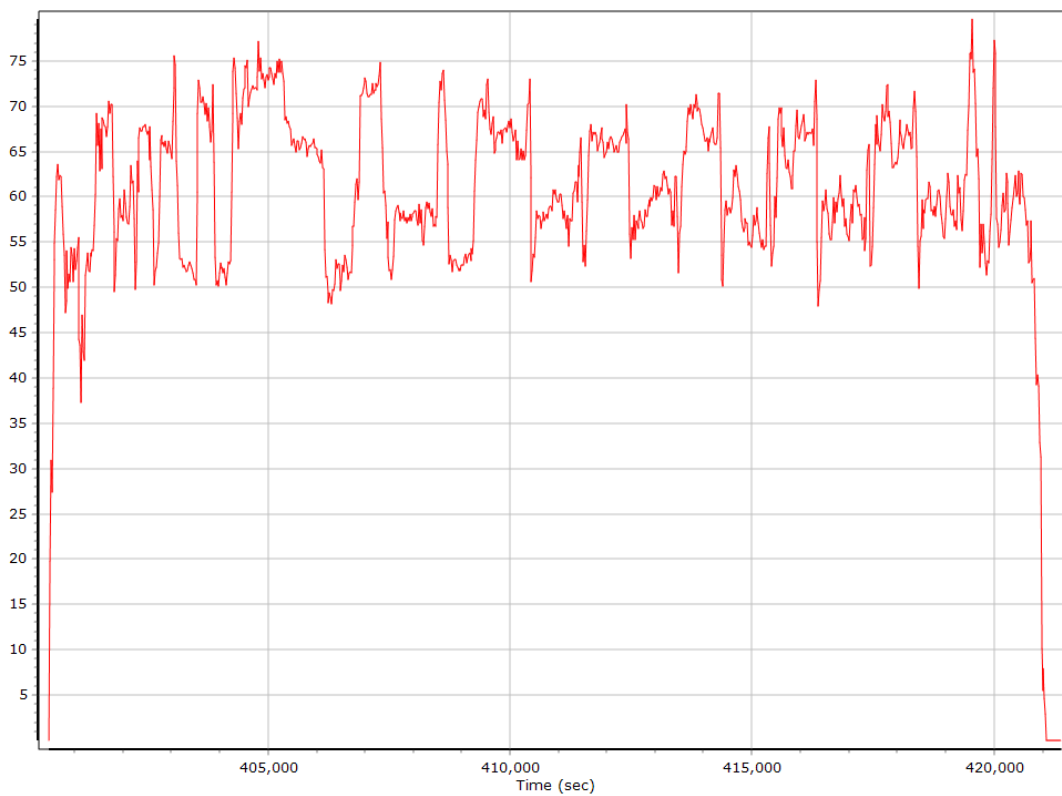
## Down Velocity



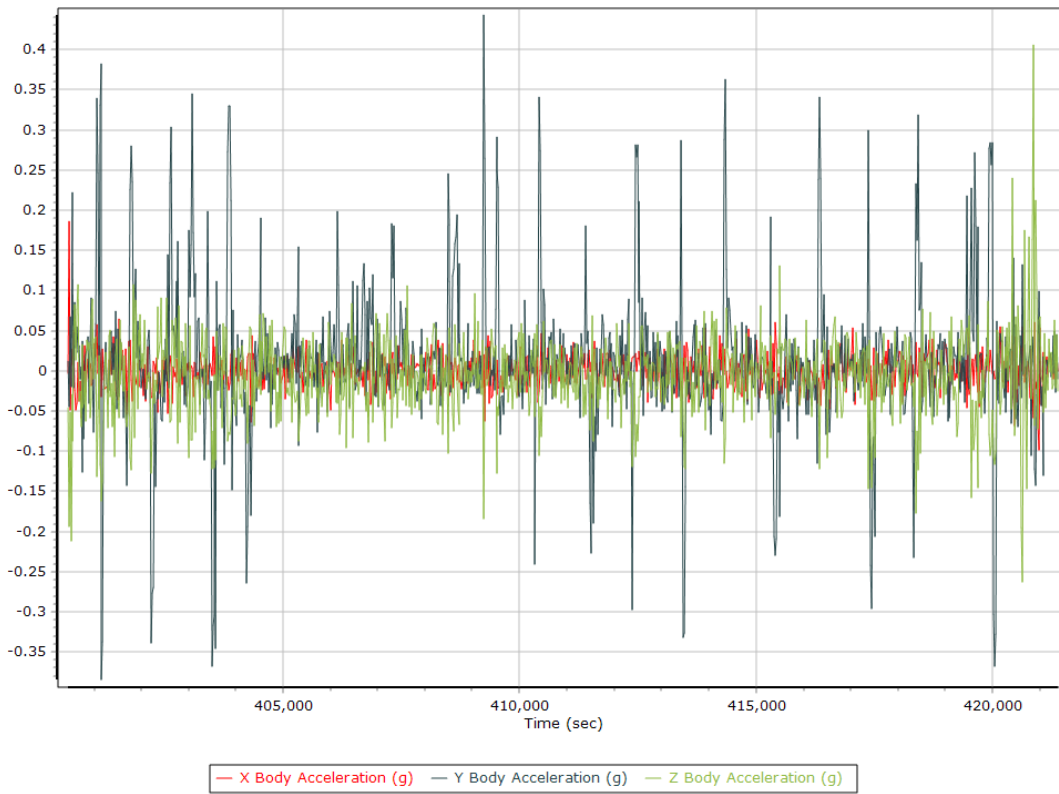
## Total Speed



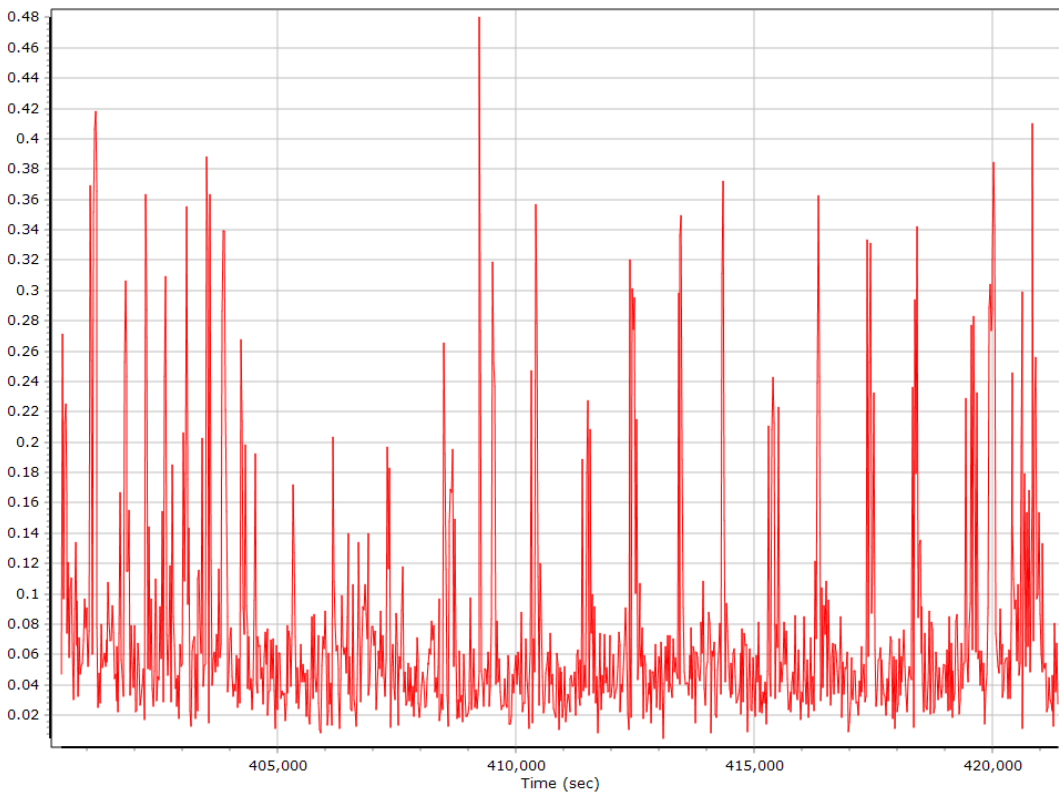
## Ground Speed



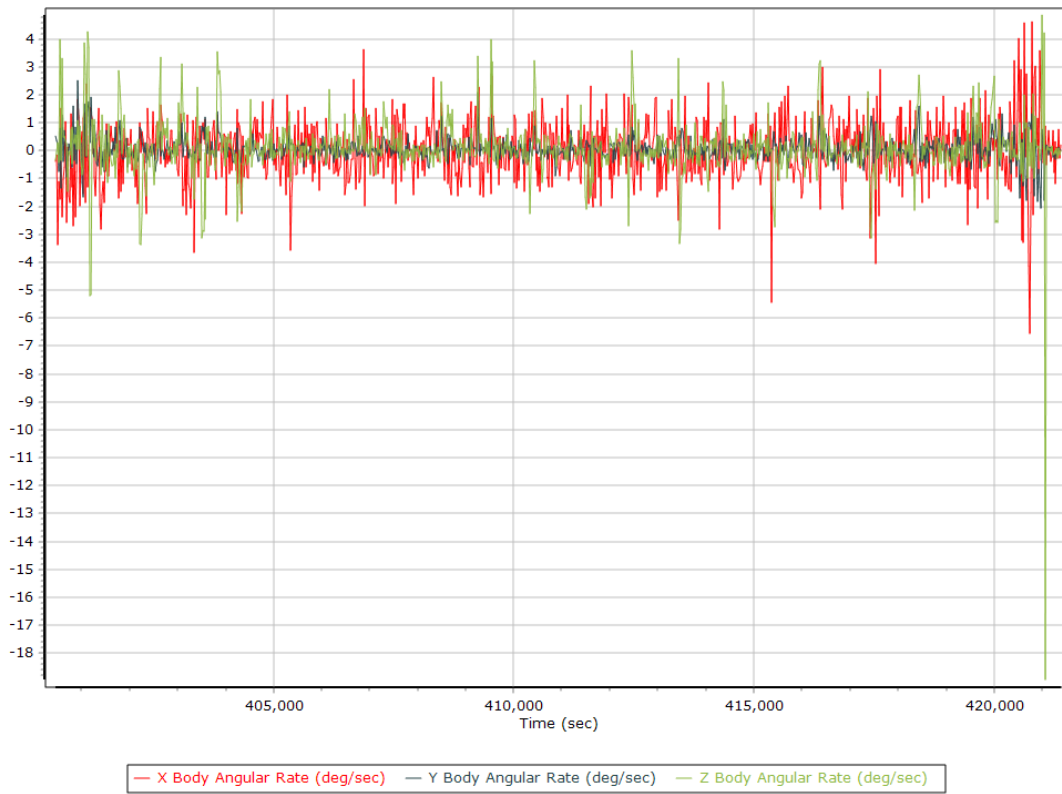
## Body Acceleration



## Total Body Acceleration



## Body Angular Rate

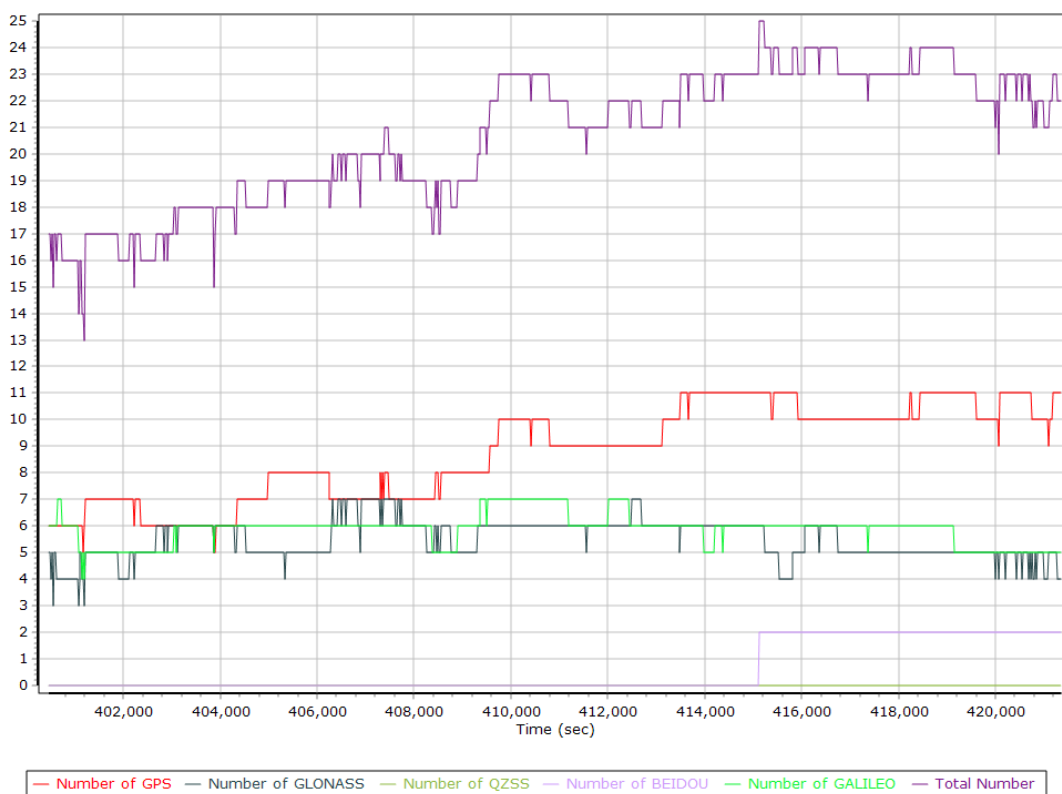


## GNSS QC

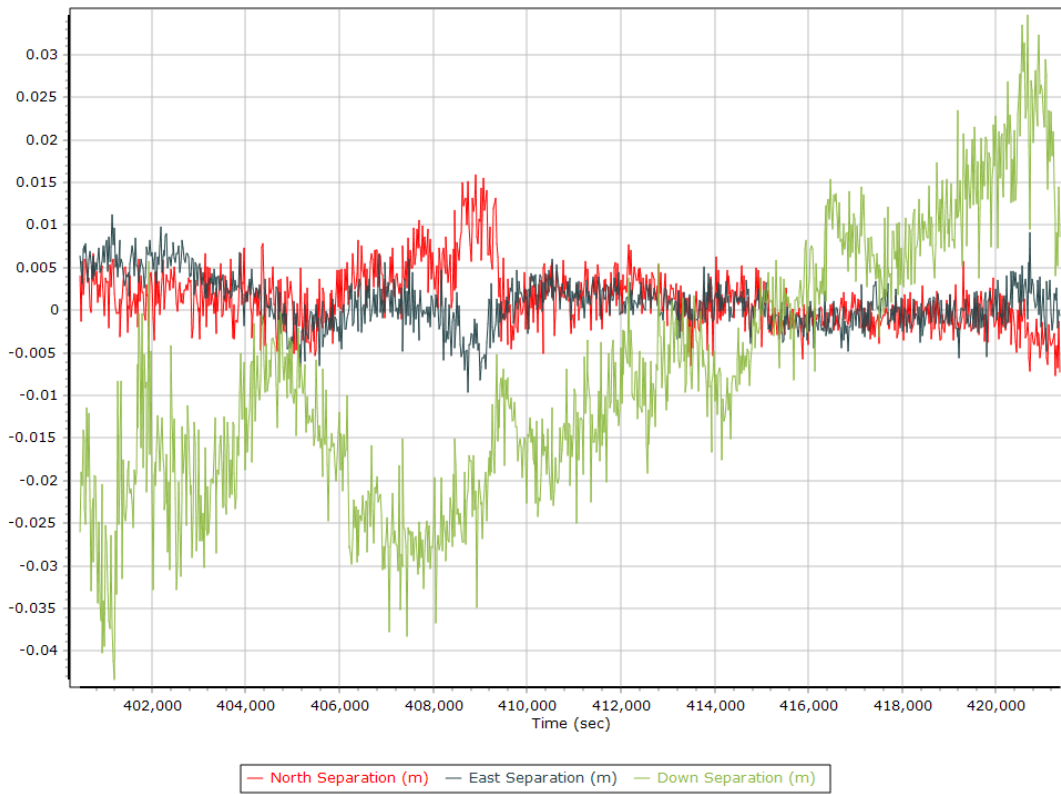
### GNSS QC Statistics

Statistics	Min	Max	Mean
Baseline length (km)	0.00	0.00	
Number of GPS SV	5	11	9
Number of GLONASS SV	0	7	5
Number of QZSS SV	0	0	0
Number of BEIDOU SV	0	2	1
Number of GALILEO SV	4	7	6
Total number of SV	12	25	21
PDOP	0.99	2.17	1.18
QC Solution Gaps	1.00	1.00	
Solution Type	Fixed	Float	No solution
Epoch (sec)	21271.00	0.00	1.00
Percentage	100.00	0.00	0.00

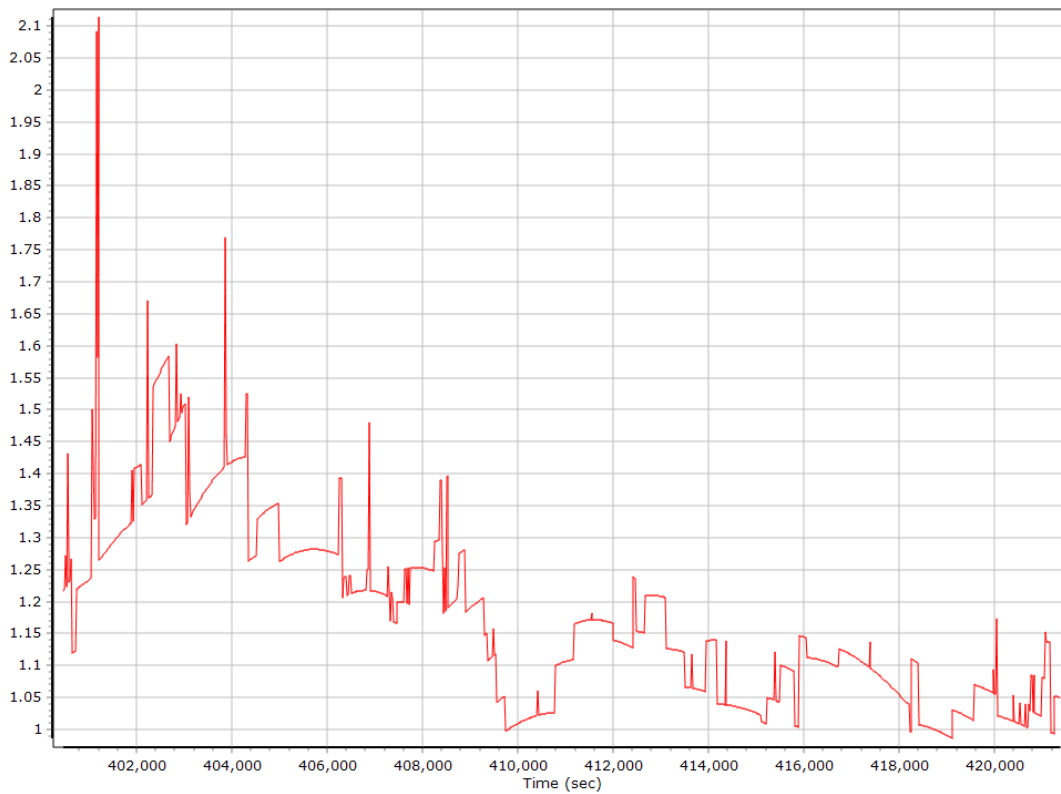
### Num SVs in solution



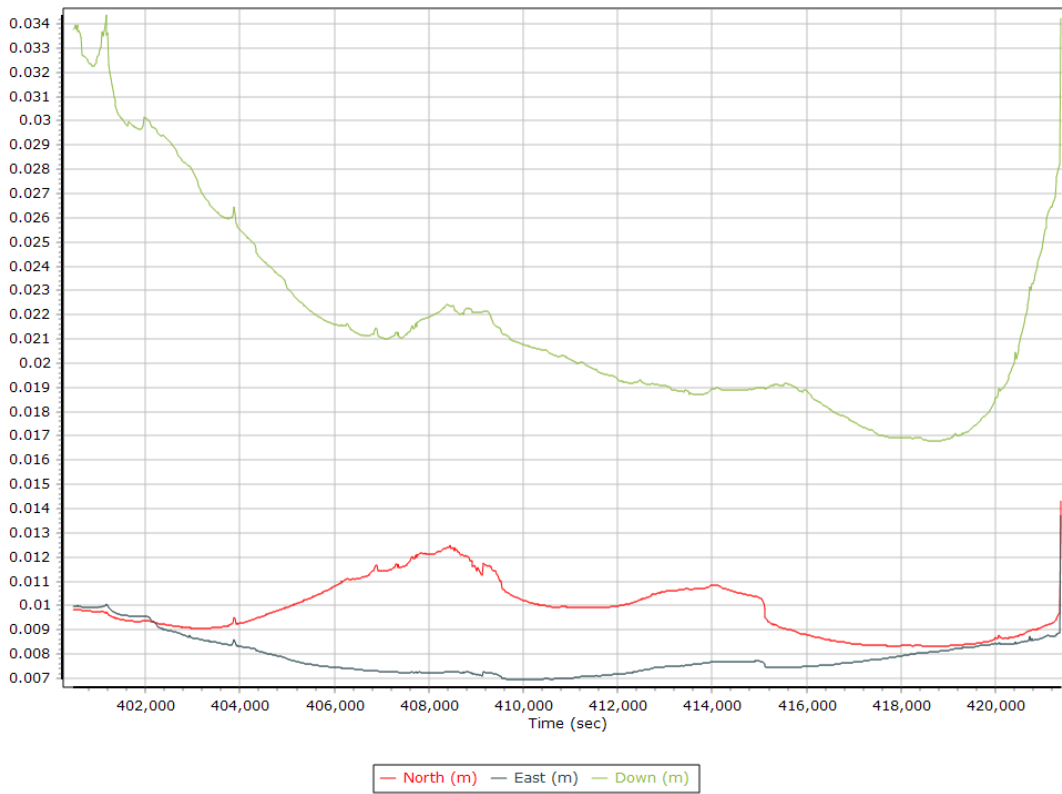
### Forward/Reverse Separation



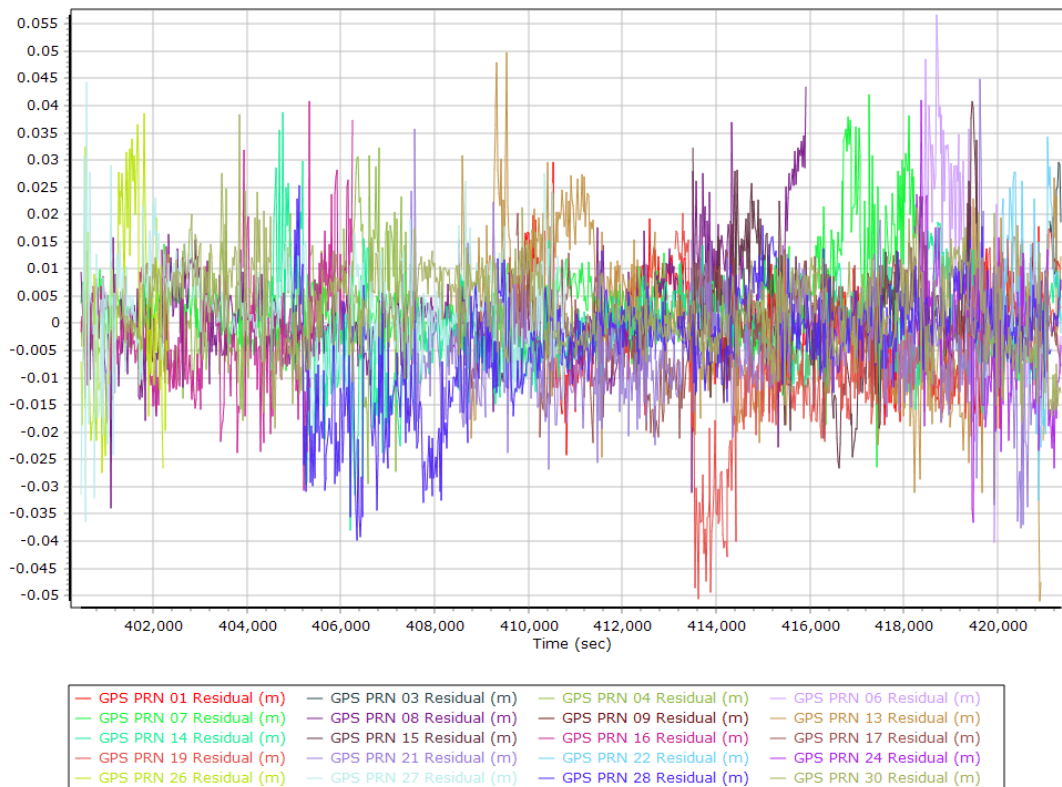
### PDOP



## Estimated Position Accuracy

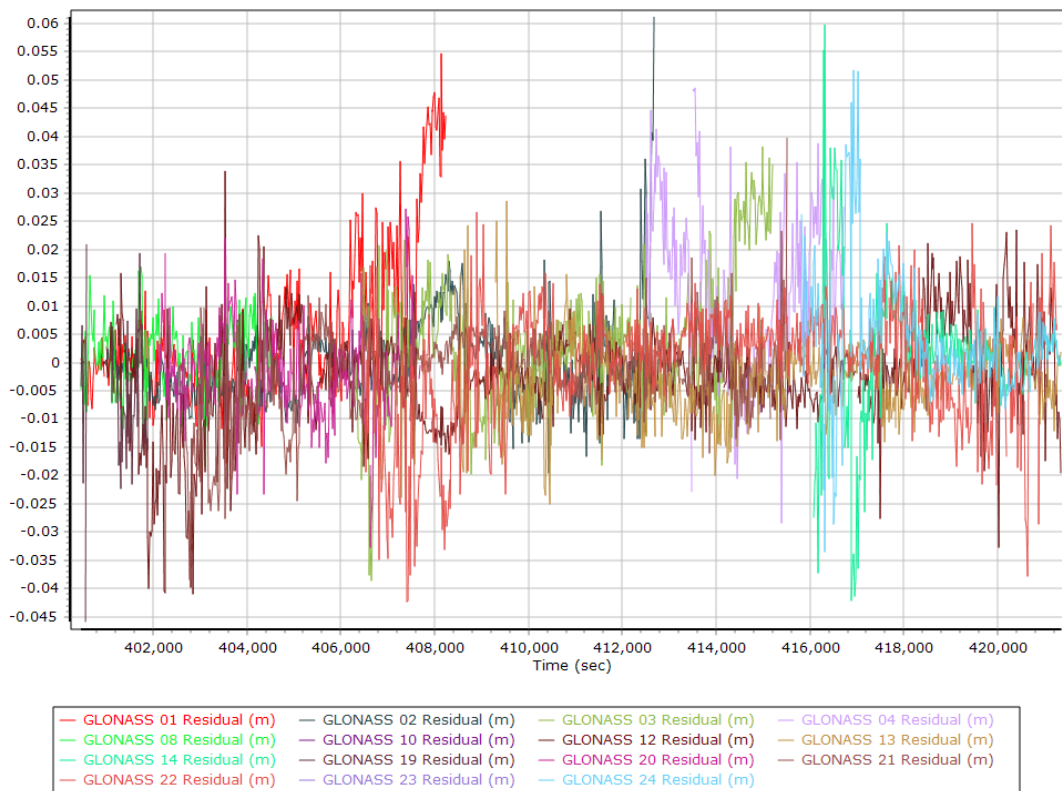


## GPS Residuals

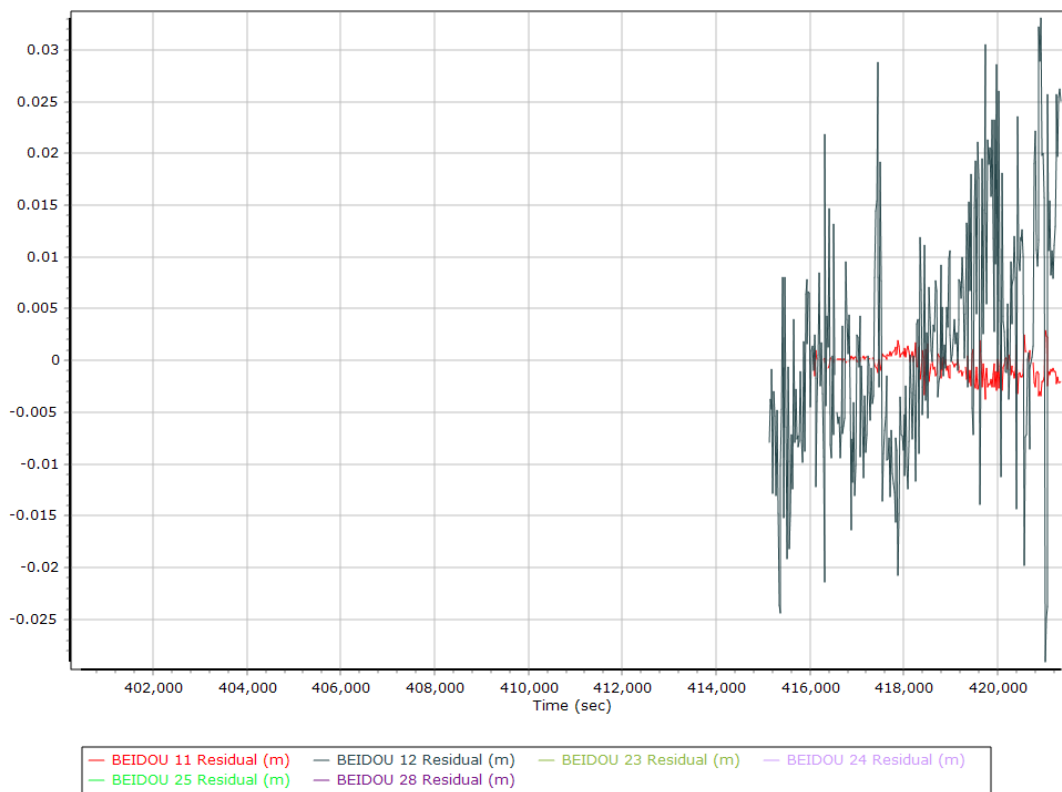




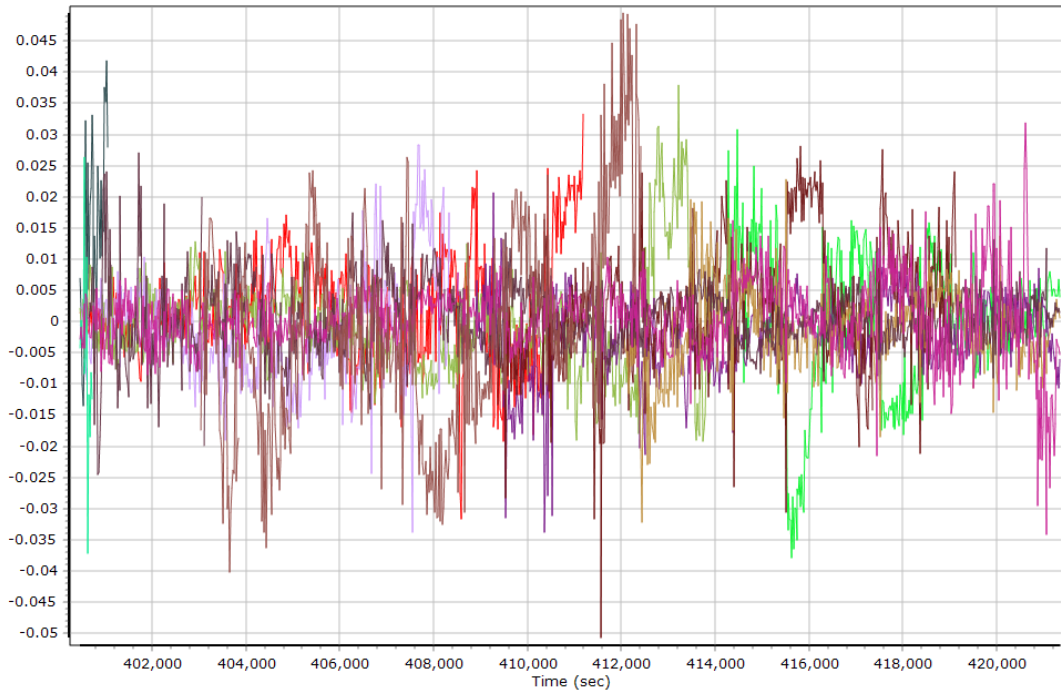
## GLONASS Residuals



## BEIDOU Residuals



## GALILEO Residuals



- |                         |                         |                         |                         |
|-------------------------|-------------------------|-------------------------|-------------------------|
| GALILEO 02 Residual (m) | GALILEO 03 Residual (m) | GALILEO 07 Residual (m) | GALILEO 08 Residual (m) |
| GALILEO 13 Residual (m) | GALILEO 15 Residual (m) | GALILEO 19 Residual (m) | GALILEO 21 Residual (m) |
| GALILEO 25 Residual (m) | GALILEO 27 Residual (m) | GALILEO 30 Residual (m) | GALILEO 36 Residual (m) |

## GNSS-Inertial Processor Configuration

Processing mode	IN-Fusion PP-RTX		
Stabilized mount	False		
Processing start time	400077.000 (04/01/2021 15:07:57)		
Processing end time	421393.000 (04/01/2021 21:03:13)		
Initial attitude source	Real-Time VNAV/RNAV Attitude		
IMU Sensor Context	Processing with Onboard IMU		
Reference to IMU lever arm (m)	0.000	0.000	0.000
Reference to IMU mounting angles (deg)	0.000	0.000	180.000
Reference to Primary GNSS lever arm (m)	0.058	-0.144	-0.940
Reference to Primary GNSS lever arm std dev (m)	0.030	0.030	0.030
Aircraft to Reference mounting angles (deg)	0.000	0.000	0.000

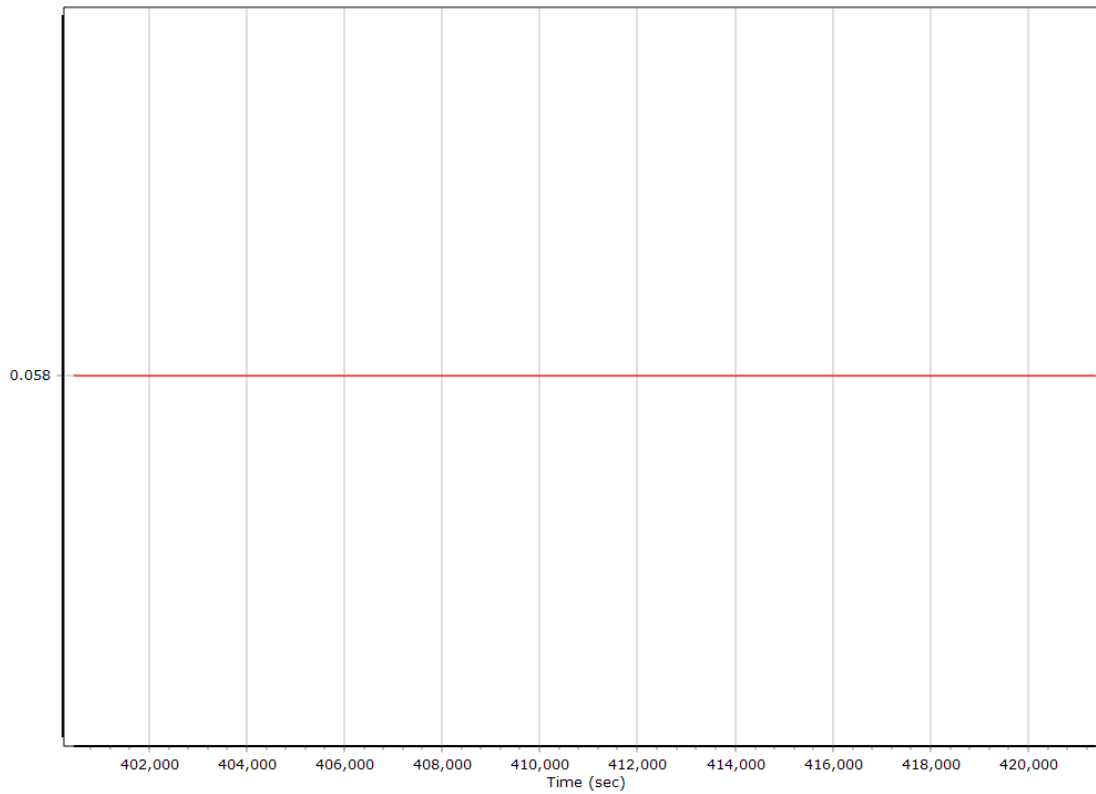
## Calibrated Installation Parameters

### Reference-Primary GNSS Lever Arm (m)

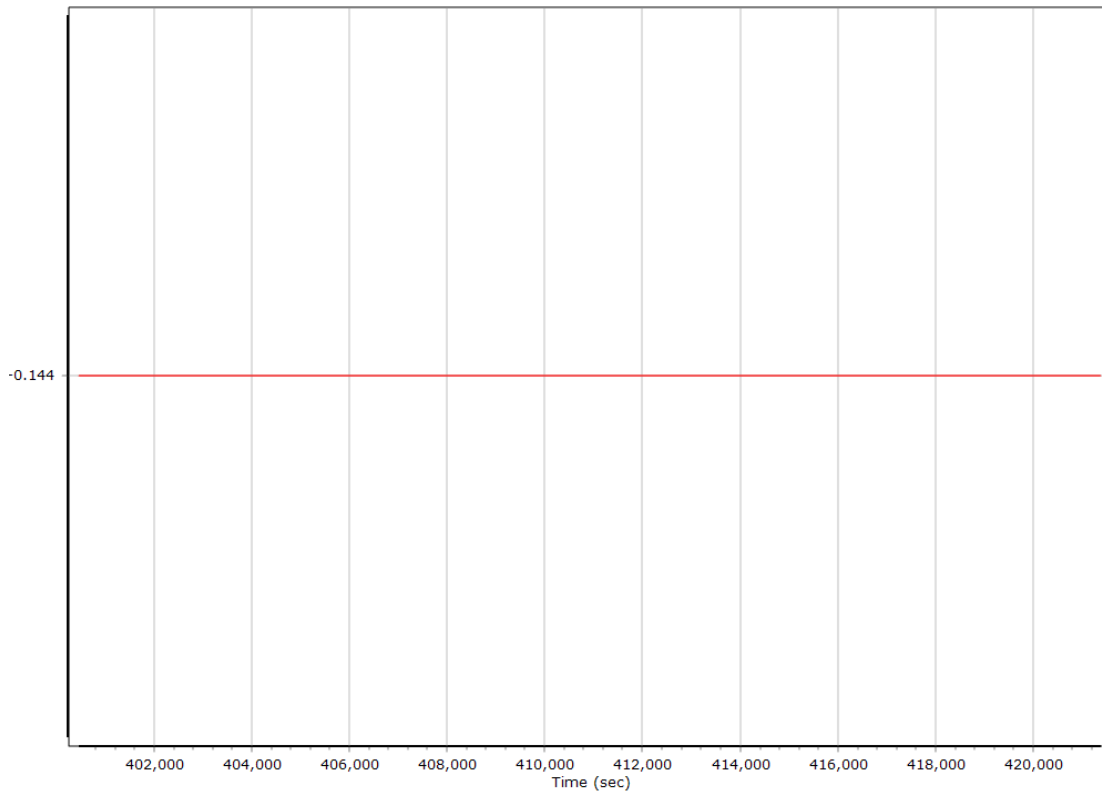
#### Reference-Primary GNSS Lever Arm Automatic Calibration Results

Original Reference to Primary GNSS lever arm (m)	0.205	-0.303	0.853
Iteration 1 Reference to Primary GNSS lever arm (m)	0.061	-0.146	-0.929
Iteration 2 Reference to Primary GNSS lever arm (m)	0.058	-0.144	-0.940
Primary GNSS Lever Arm In use	Iteration 2		

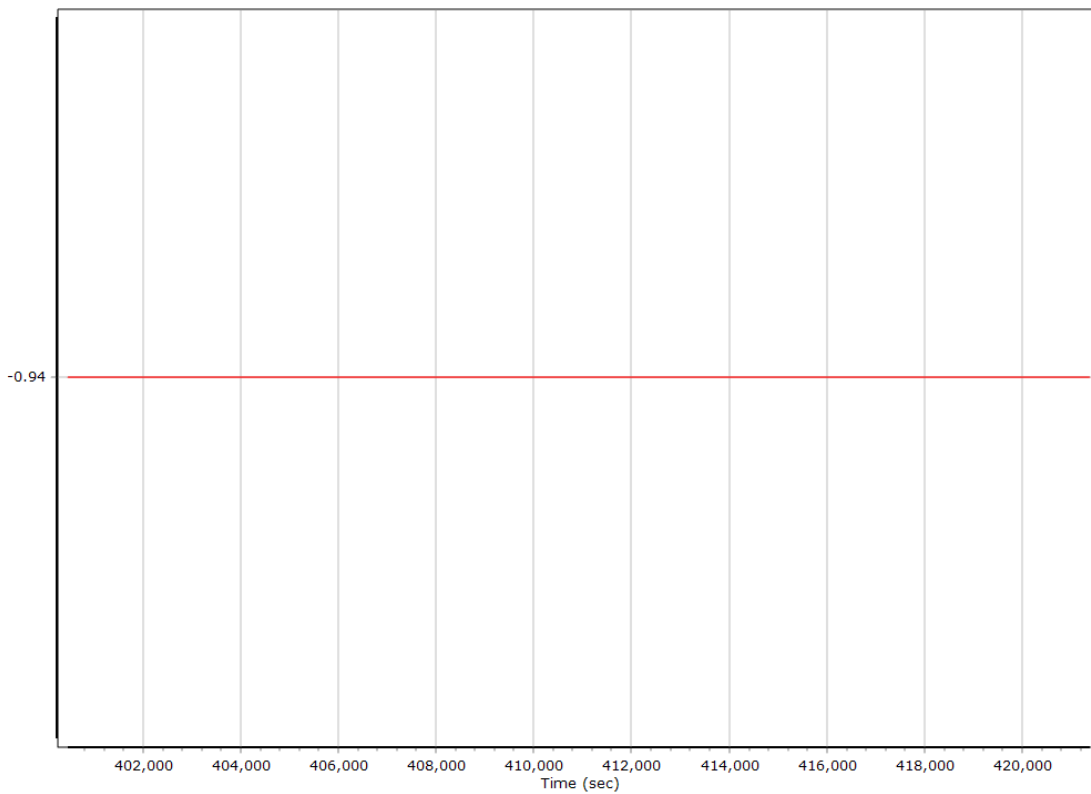
### X Reference-Primary GNSS Lever Arm (m)



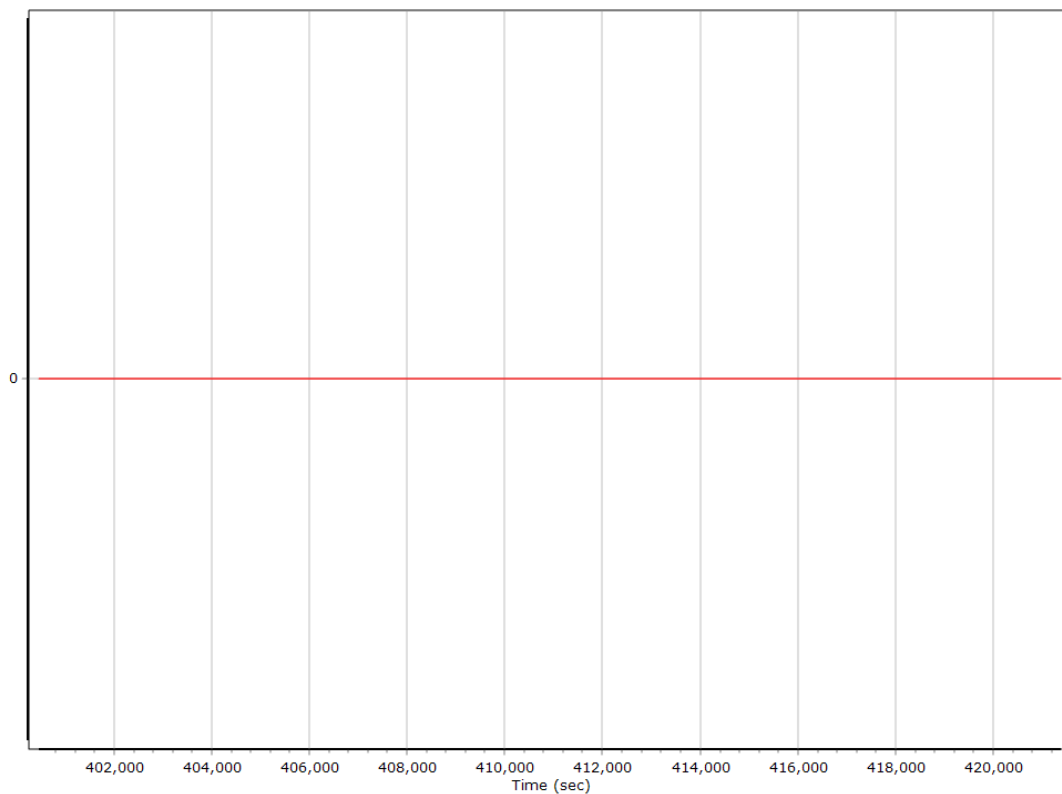
### Y Reference-Primary GNSS Lever Arm (m)



### Z Reference-Primary GNSS Lever Arm (m)



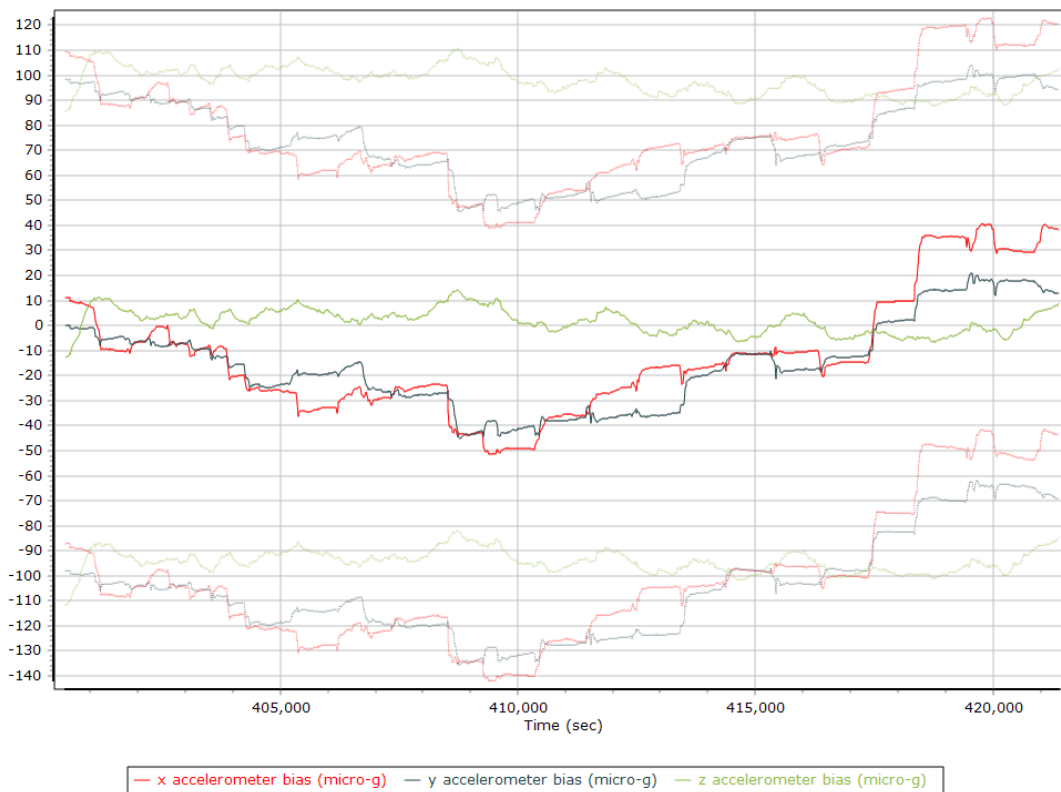
### Reference-Primary GNSS Lever Arm Figure of Merit



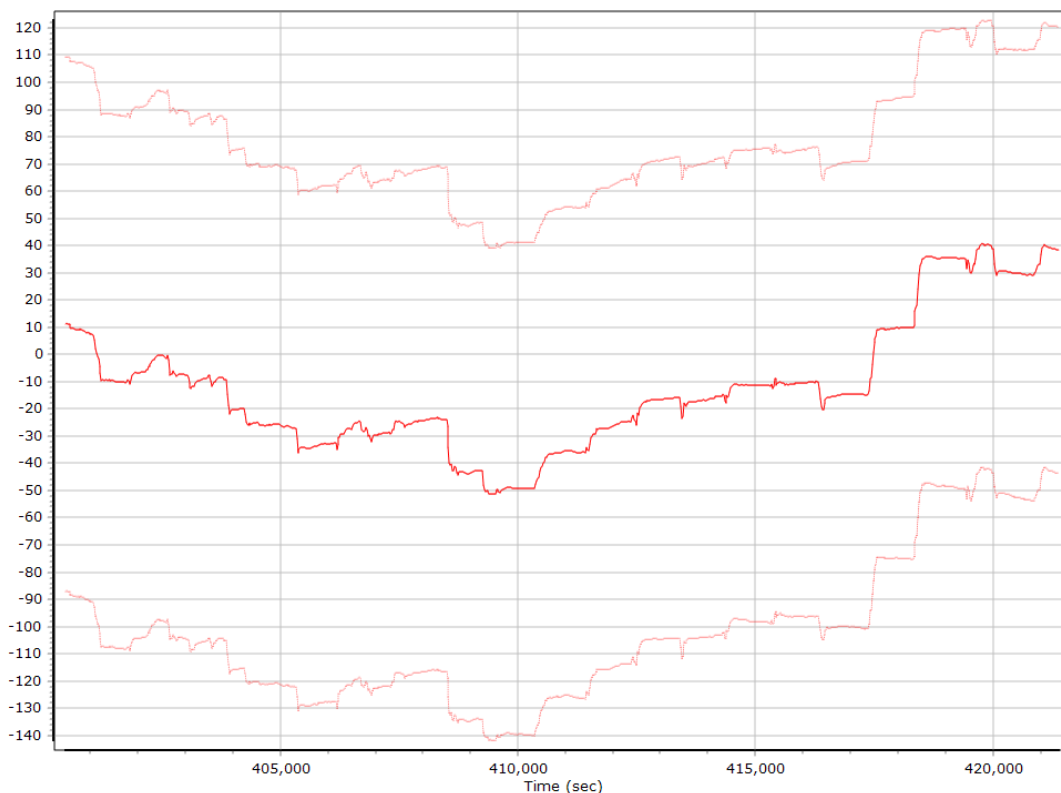
## IN-Fusion QC

### Forward Processed Estimated Errors, Reference Frame

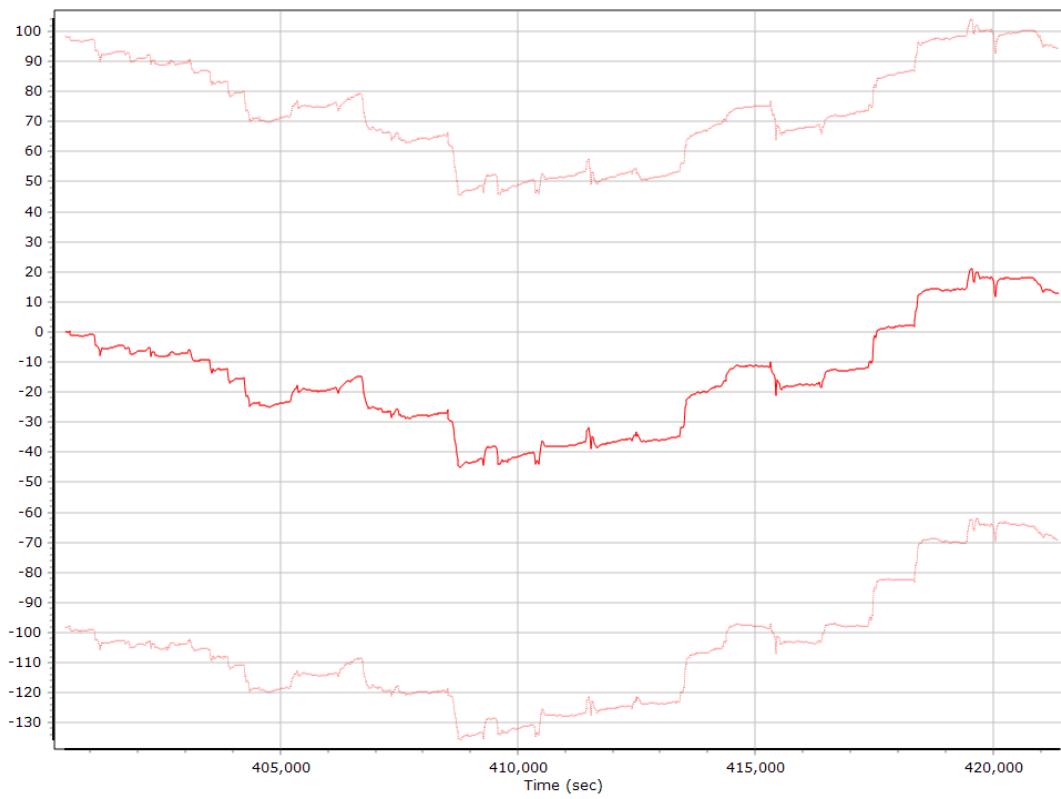
#### Accelerometer Bias (micro-g)



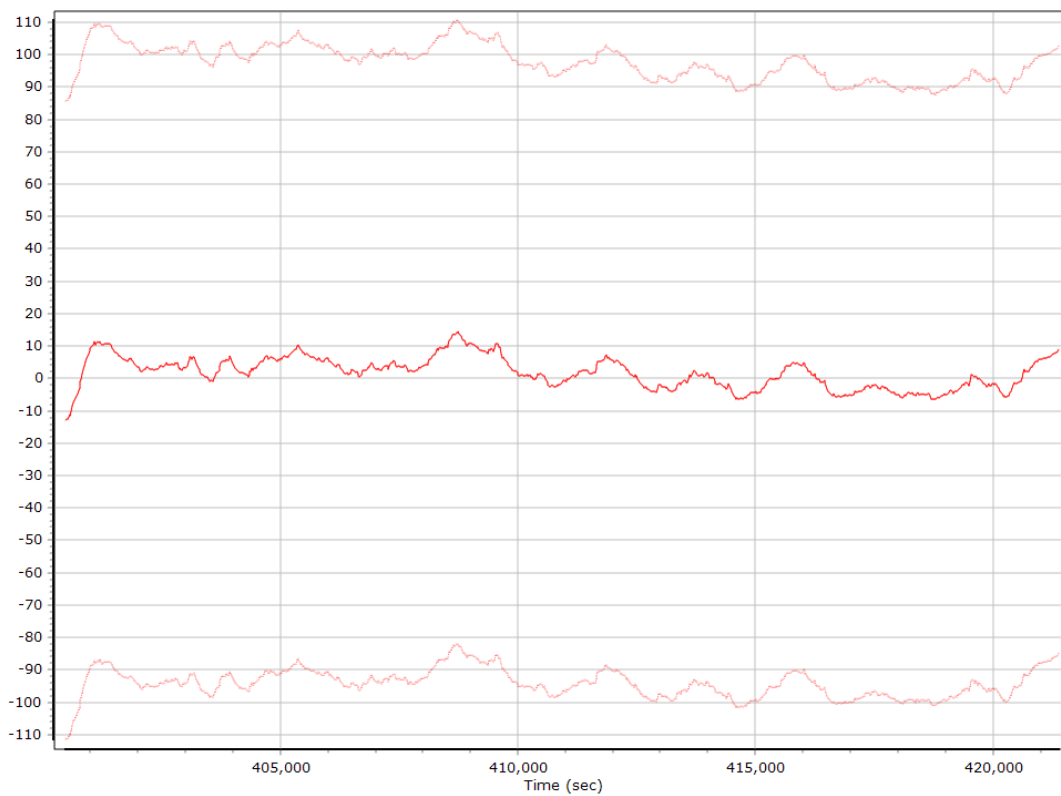
#### X Accelerometer Bias (micro-g)



### Y Accelerometer Bias (micro-g)

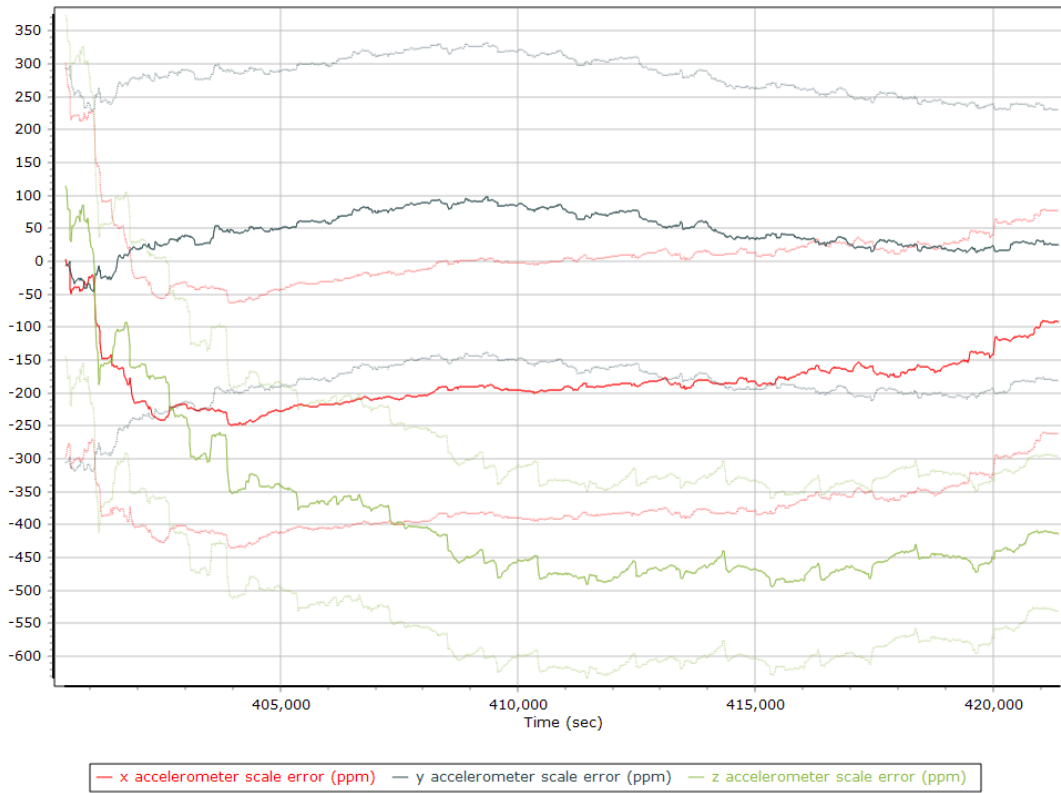


### Z Accelerometer Bias (micro-g)

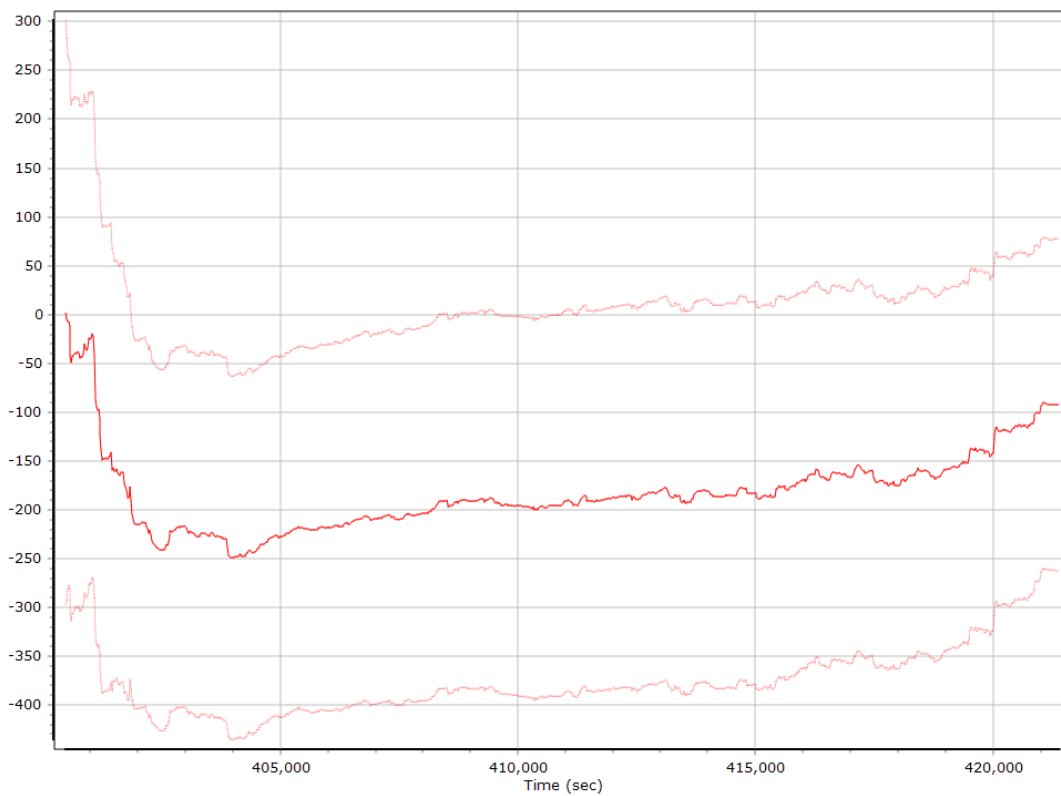




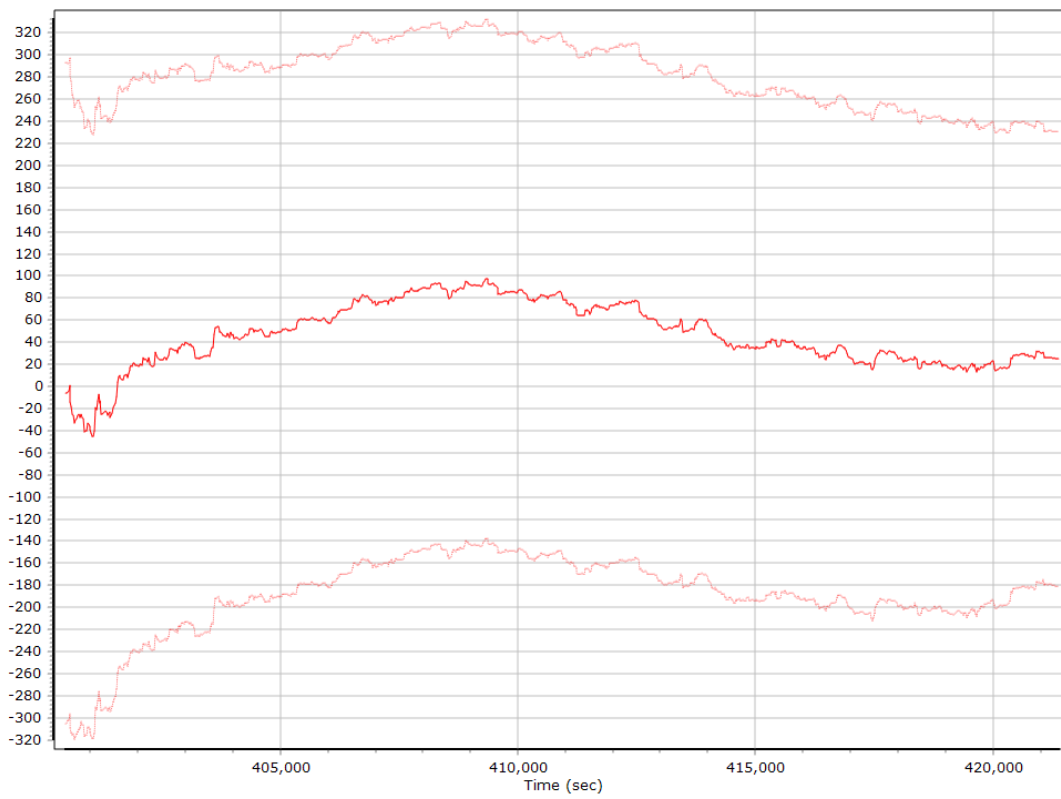
### Accelerometer Scale Error (ppm)



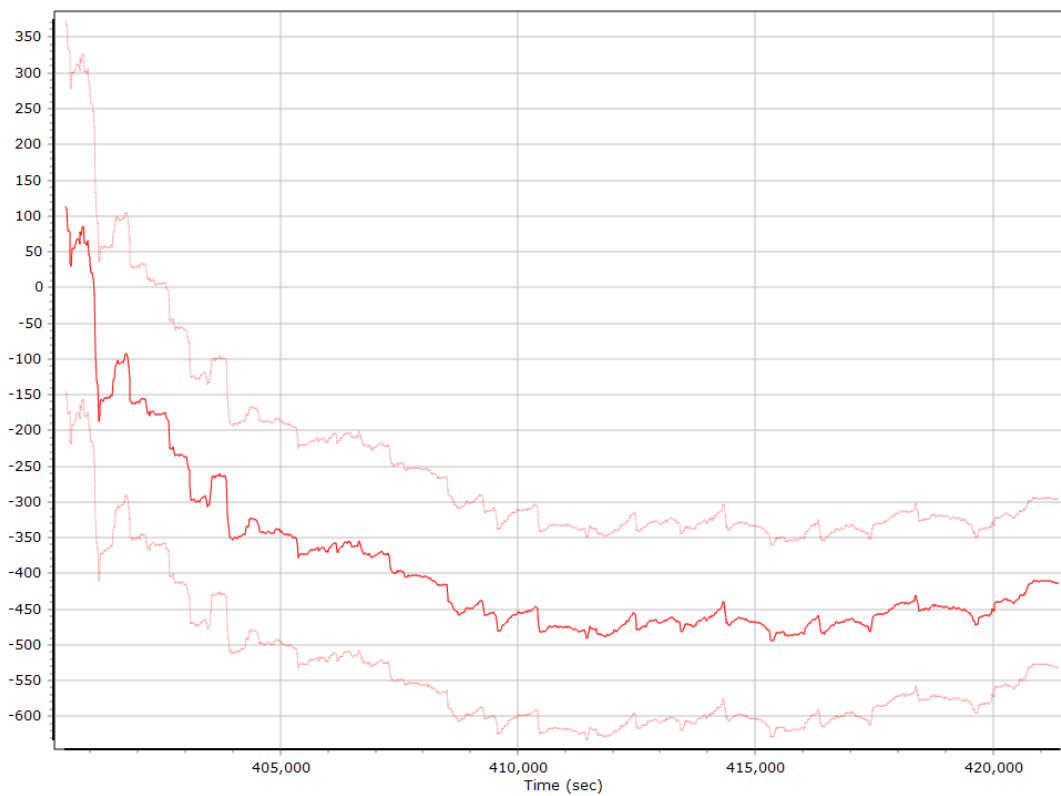
### X Accelerometer Scale Error (ppm)



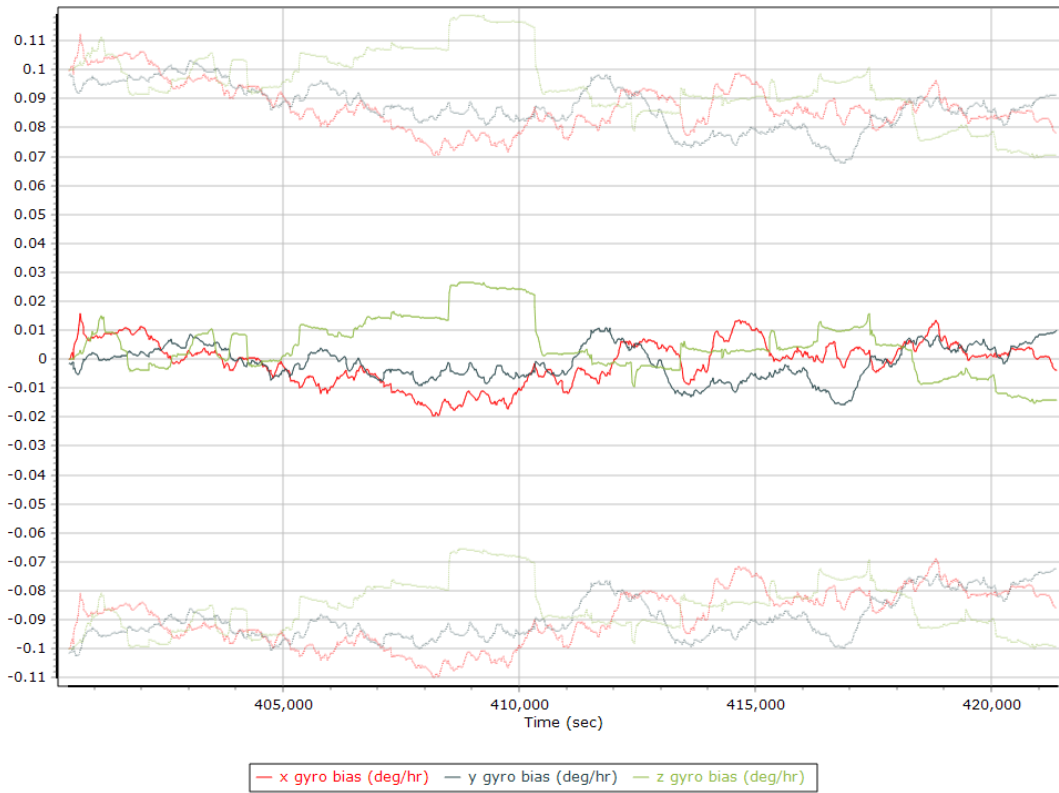
### Y Accelerometer Scale Error (ppm)



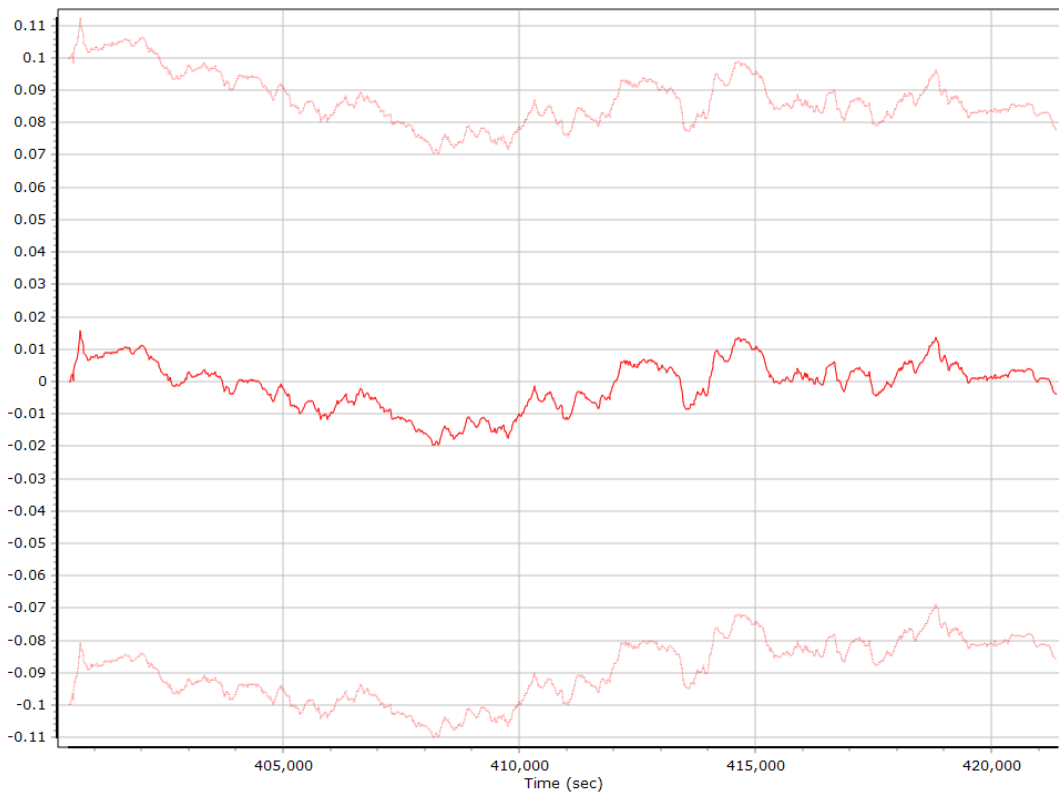
### Z Accelerometer Scale Error (ppm)



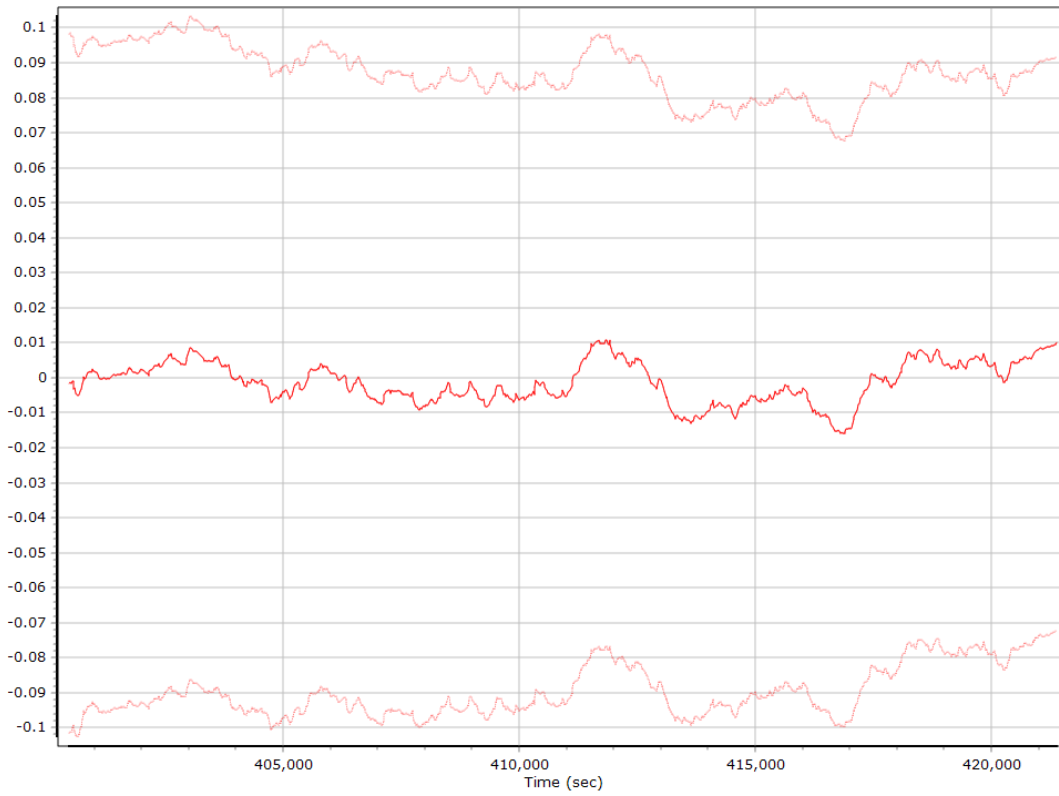
### Gyro Bias (deg/h)



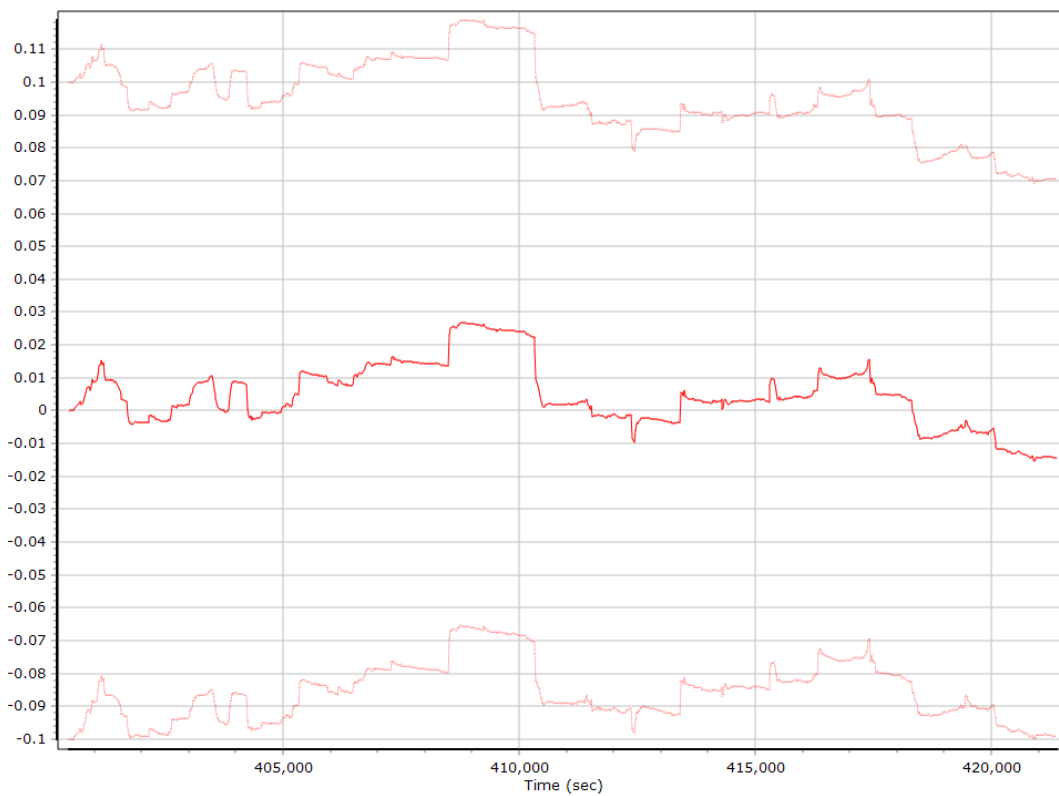
### X Gyro Bias (deg/h)



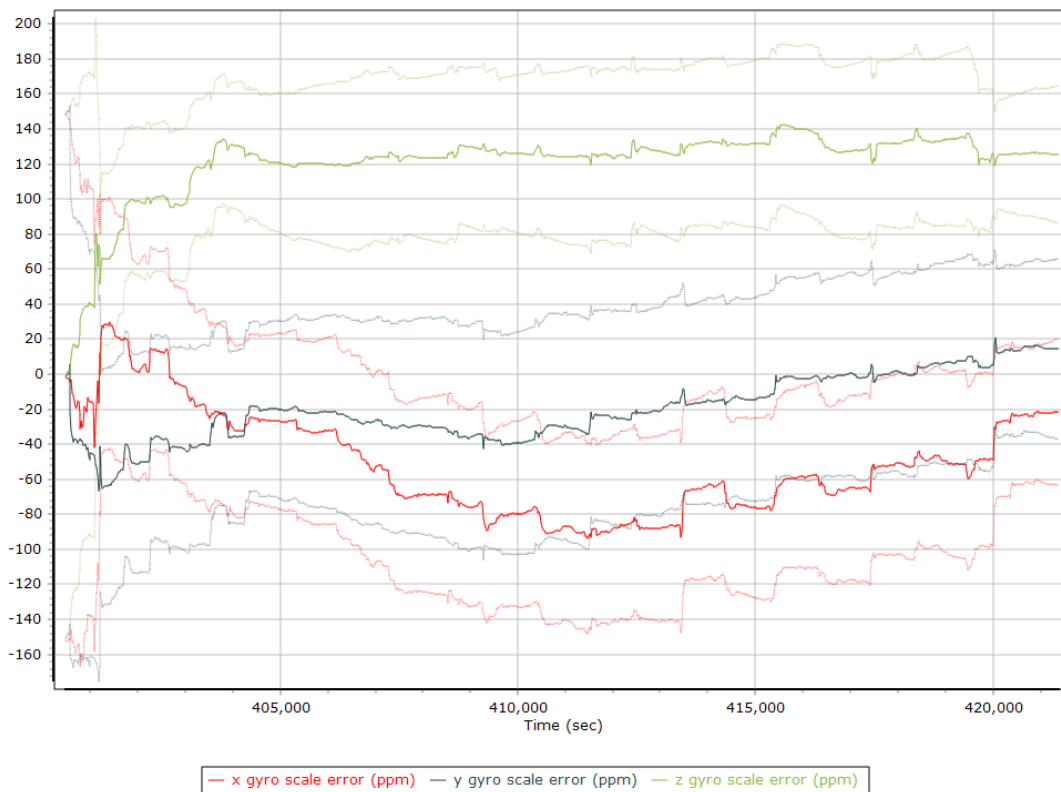
### Y Gyro Bias (deg/h)



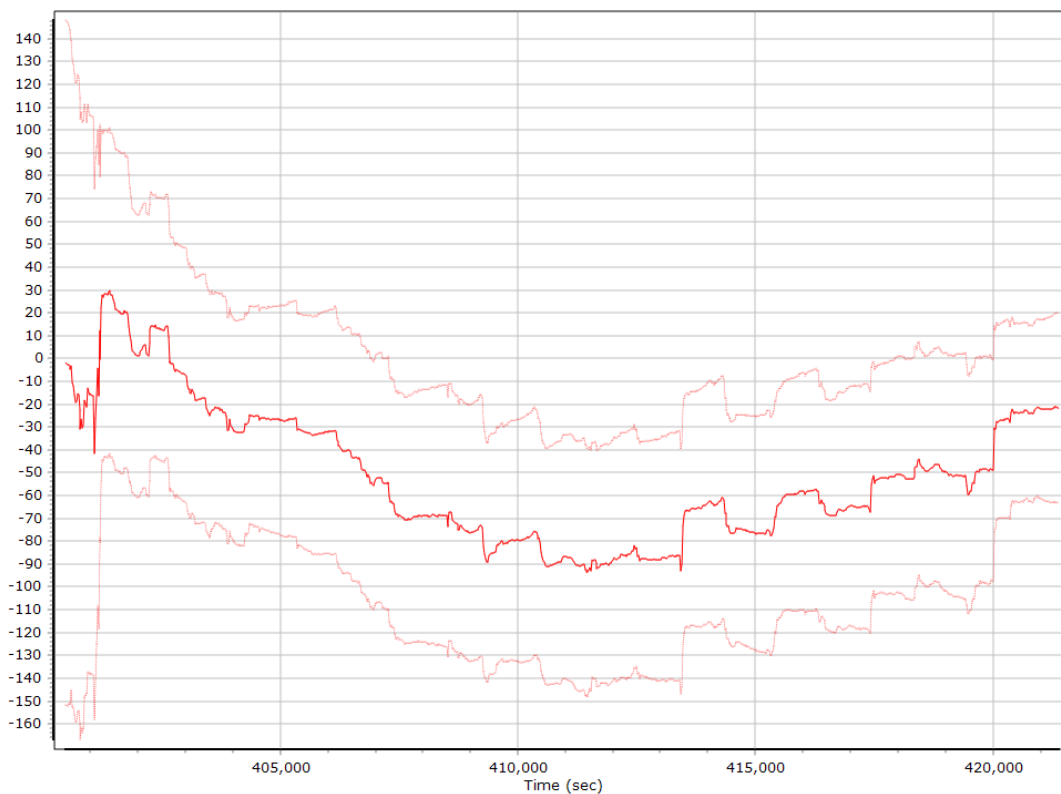
### Z Gyro Bias (deg/h)



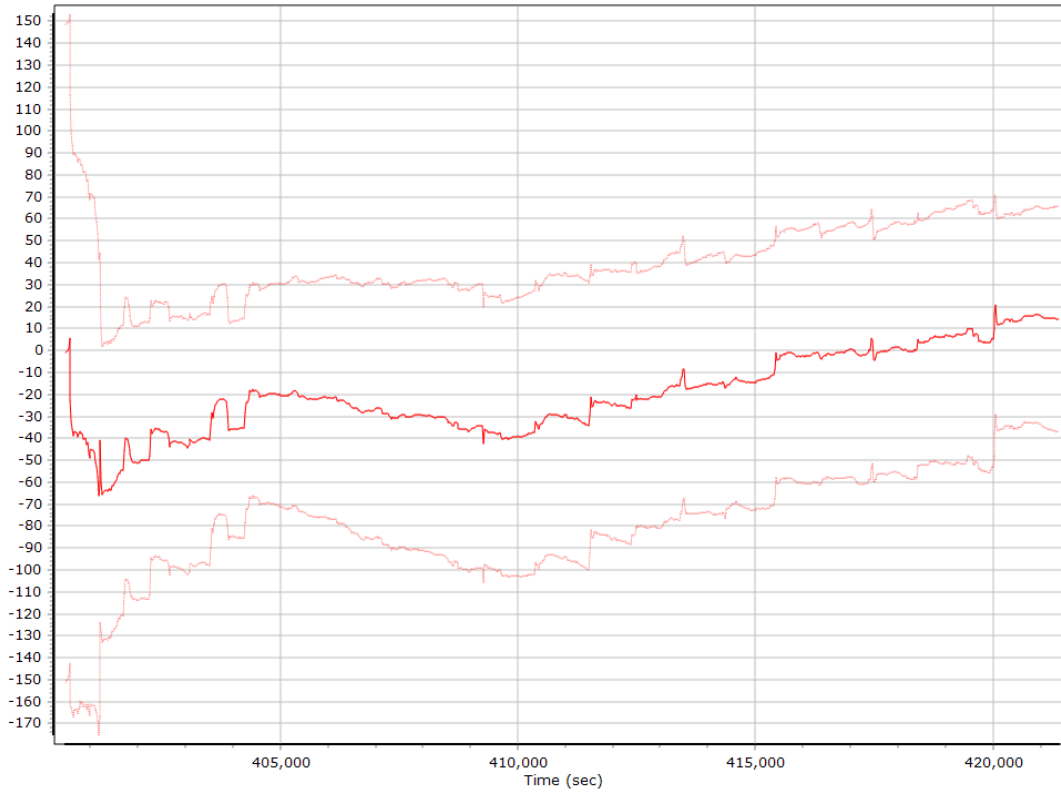
### Gyro Scale Error (ppm)



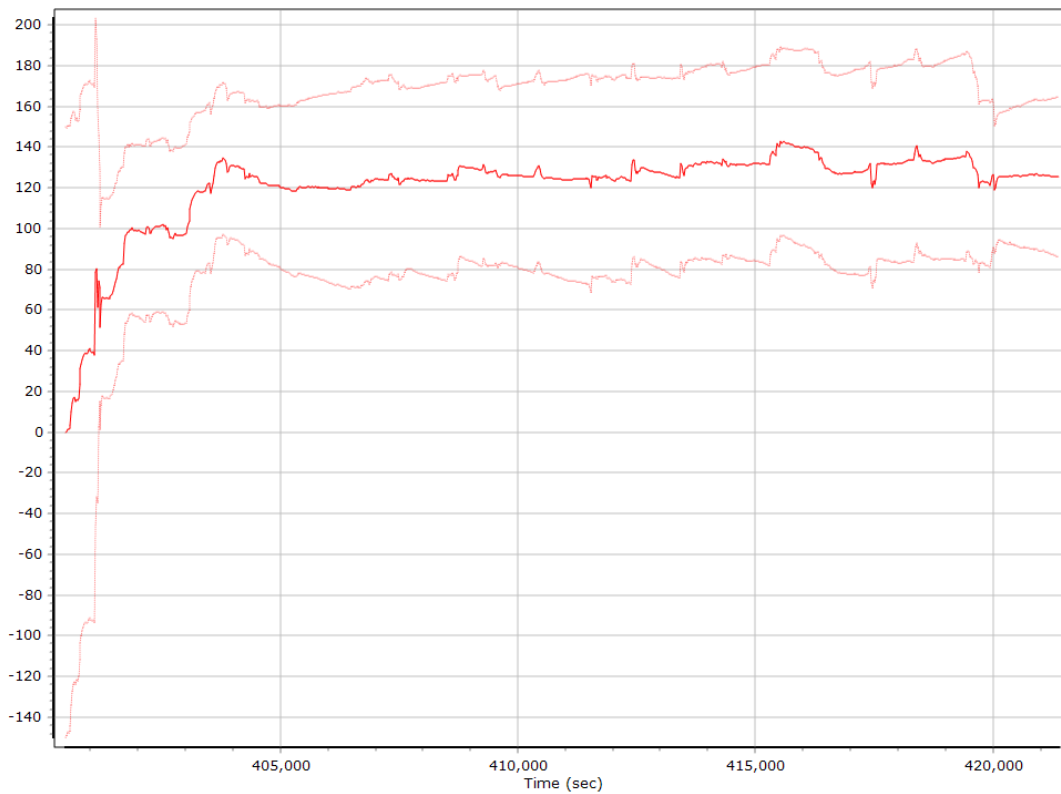
### X Gyro Scale Error (ppm)



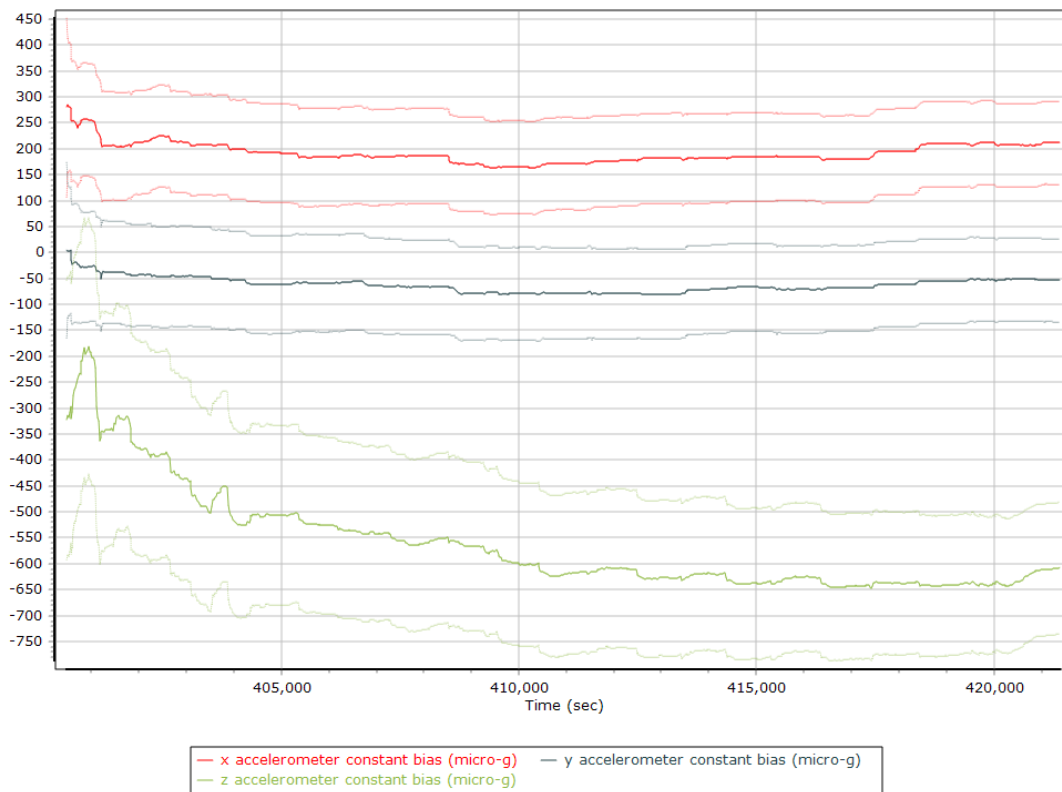
### Y Gyro Scale Error (ppm)



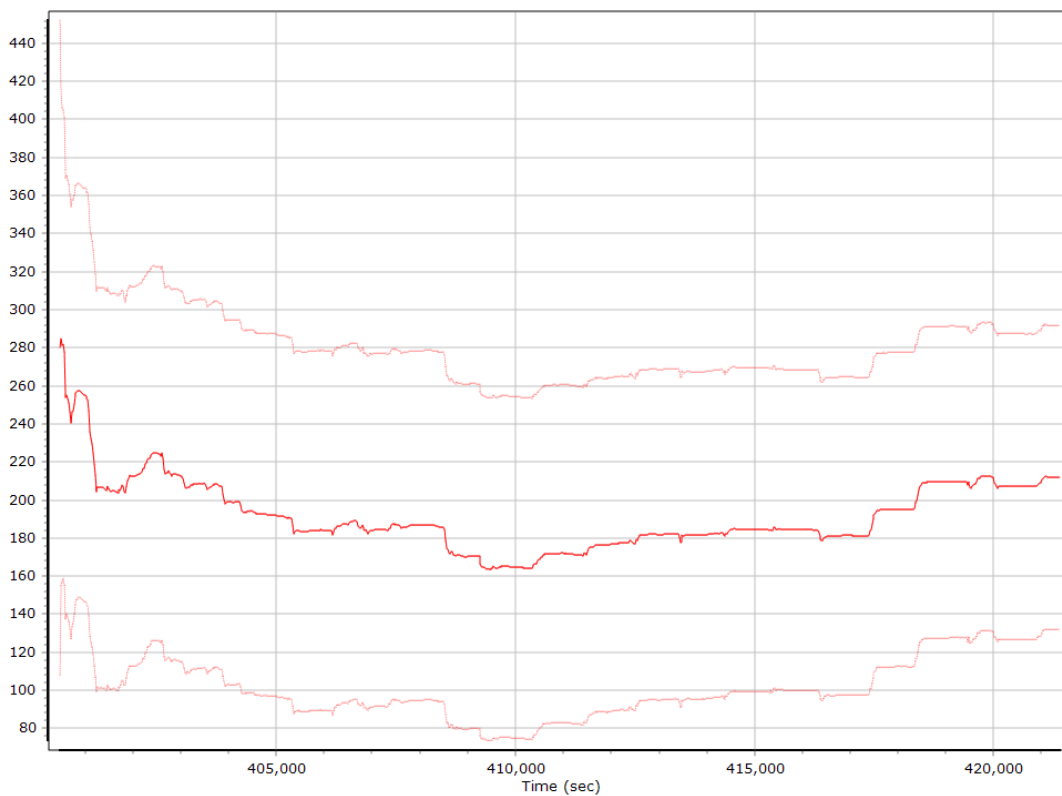
### Z Gyro Scale Error (ppm)



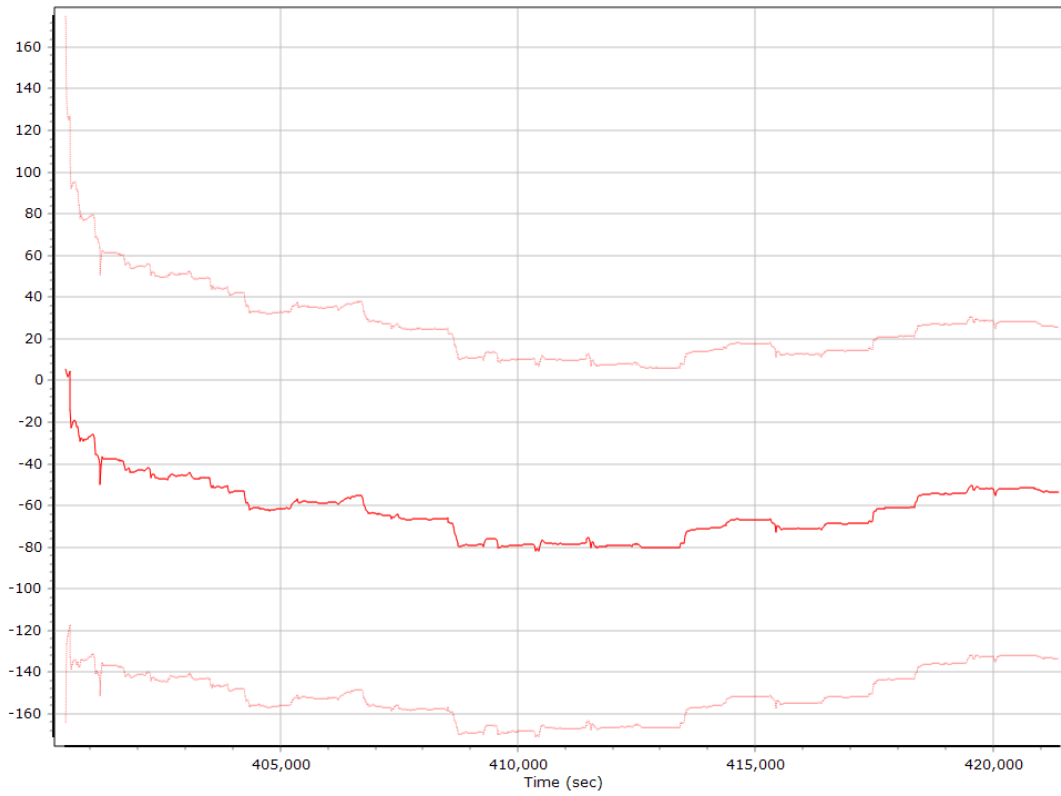
## Forward Processed Estimated Constant Errors, Reference Frame Accelerometer Bias (micro-g)



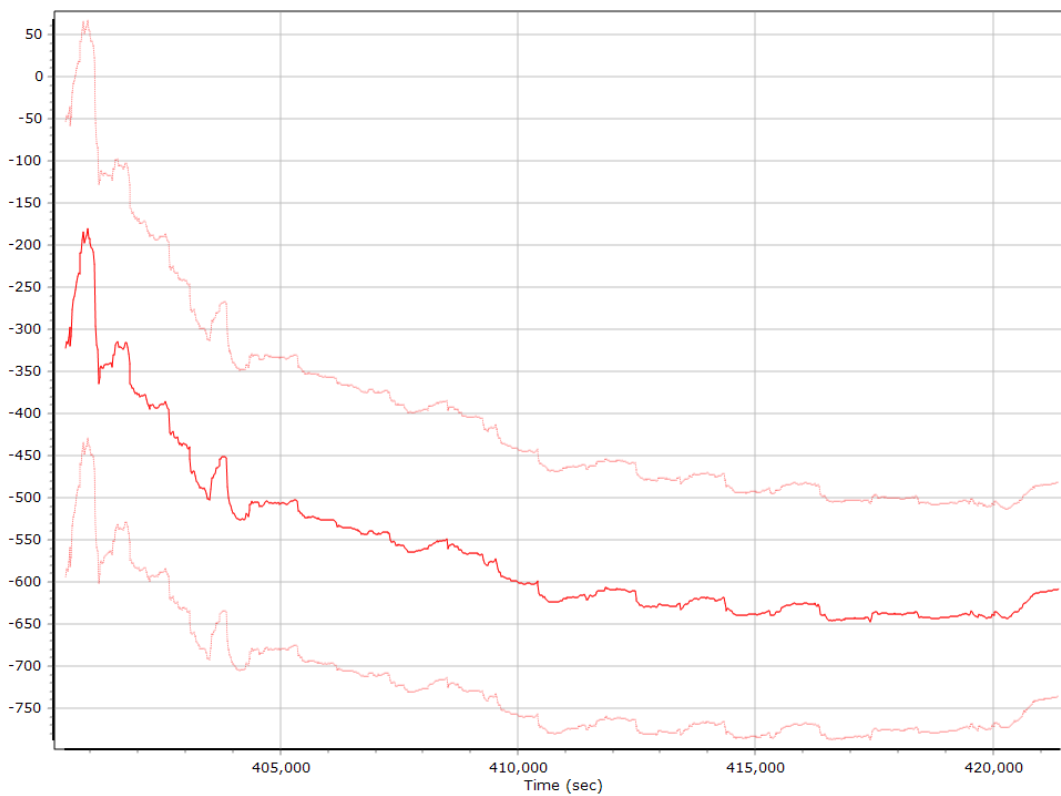
## X Accelerometer Bias (micro-g)



### Y Accelerometer Bias (micro-g)

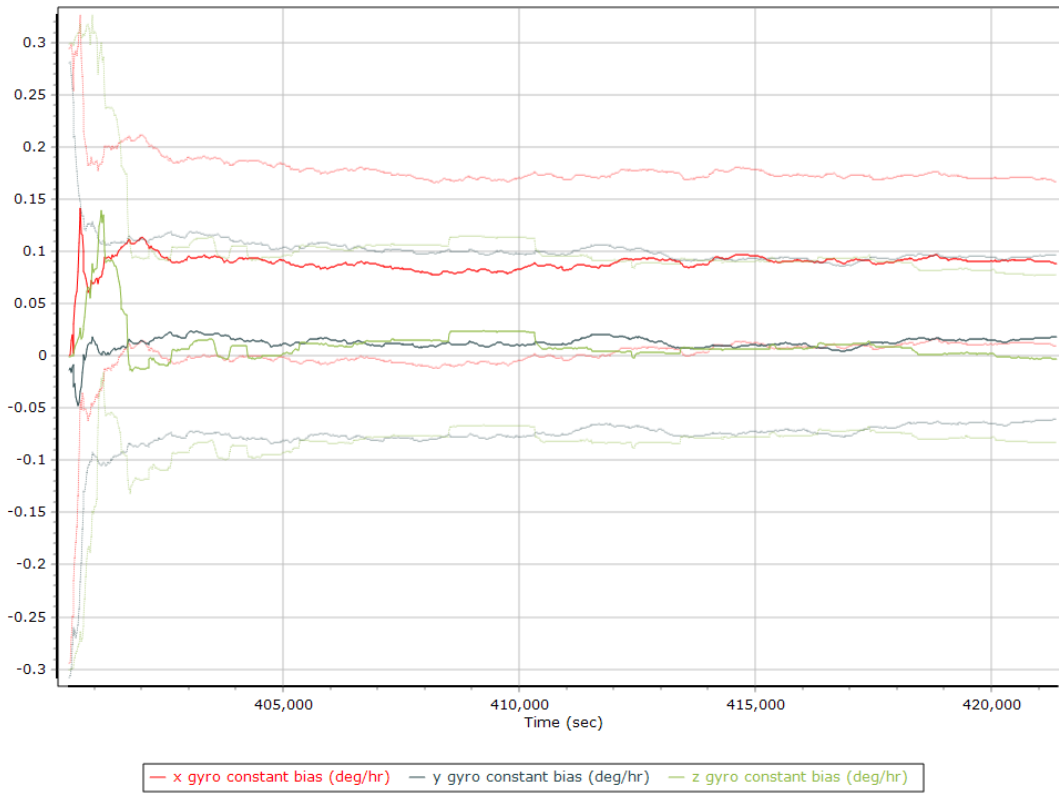


### Z Accelerometer Bias (micro-g)

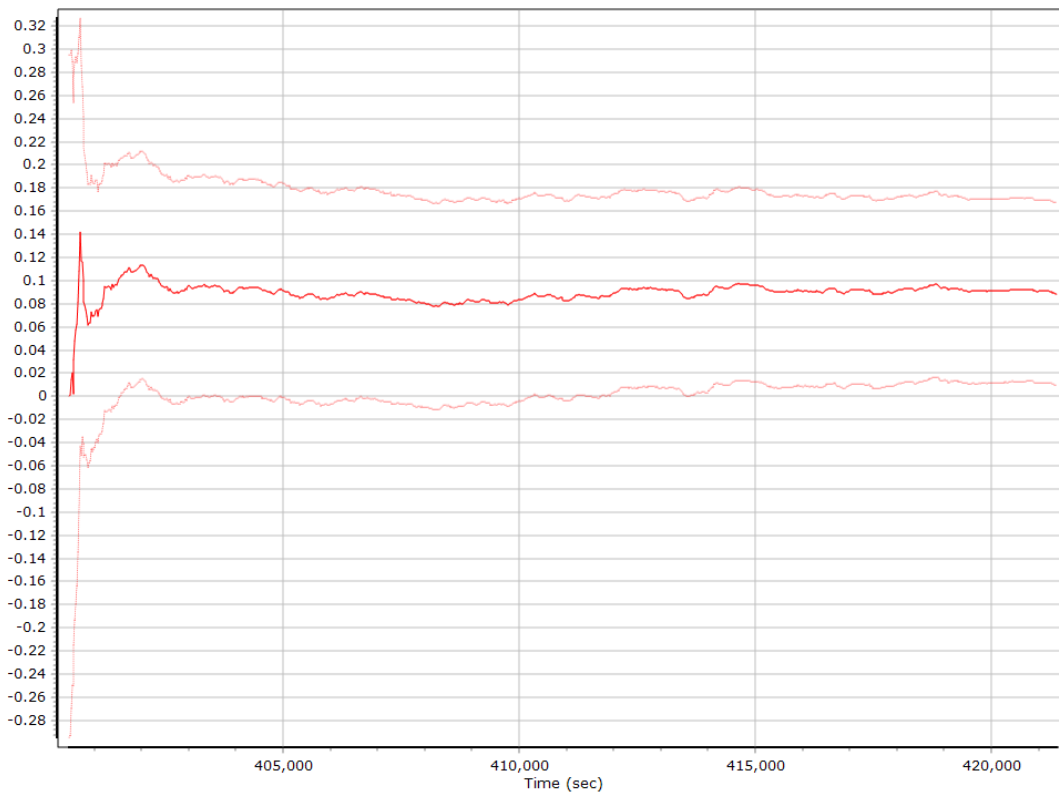




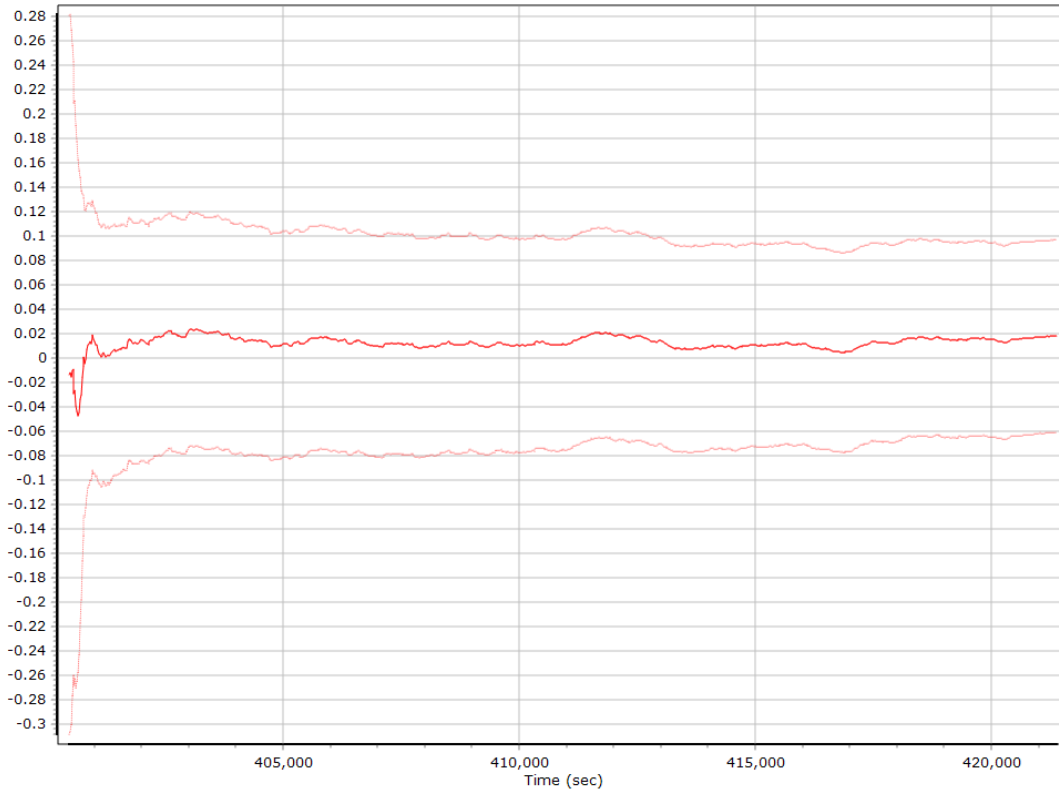
### Gyro Bias (deg/h)



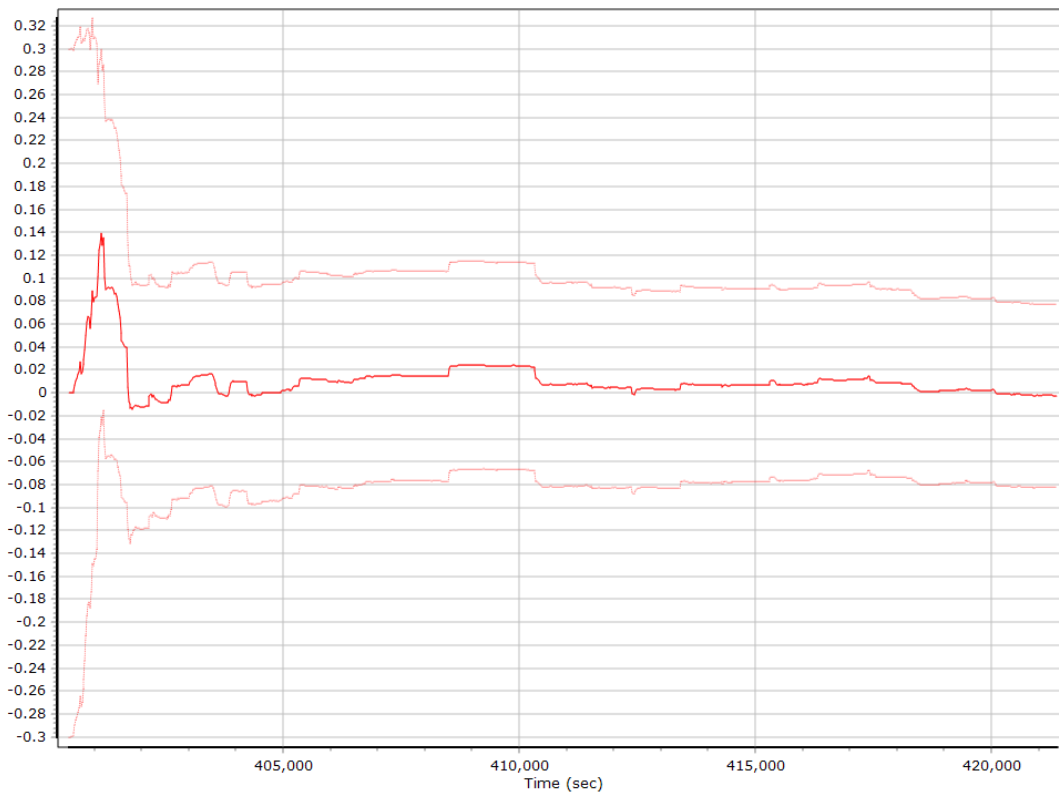
### X Gyro Bias (deg/h)



### Y Gyro Bias (deg/h)

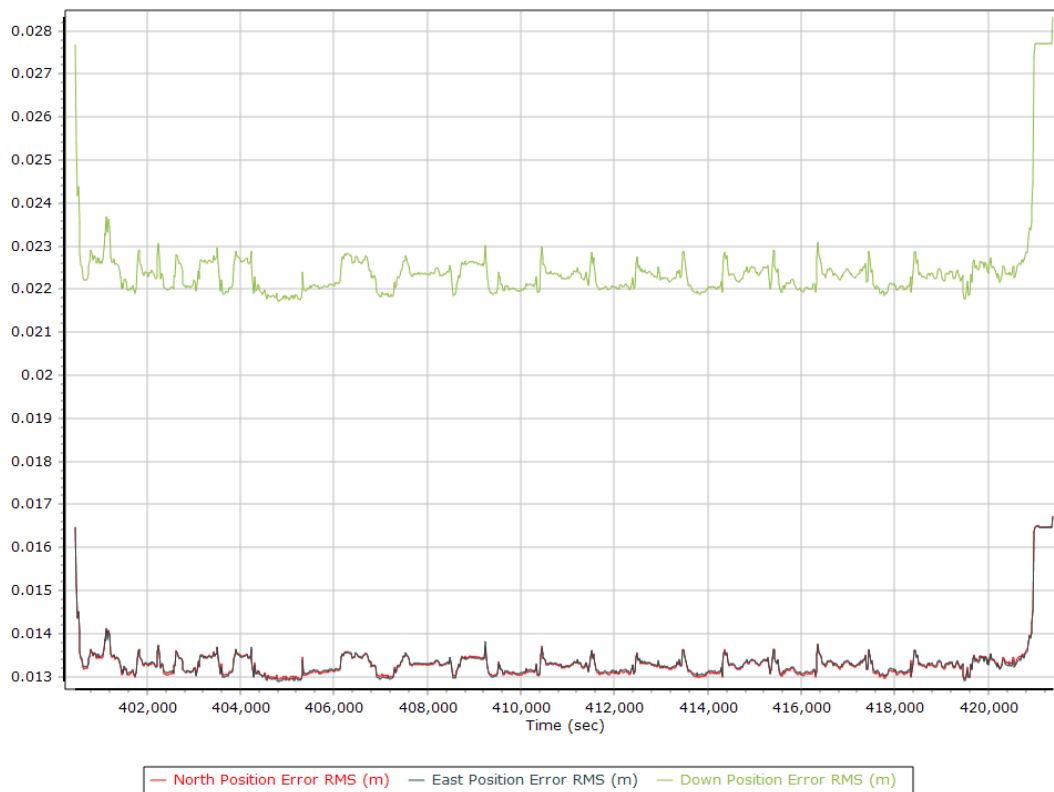


### Z Gyro Bias (deg/h)

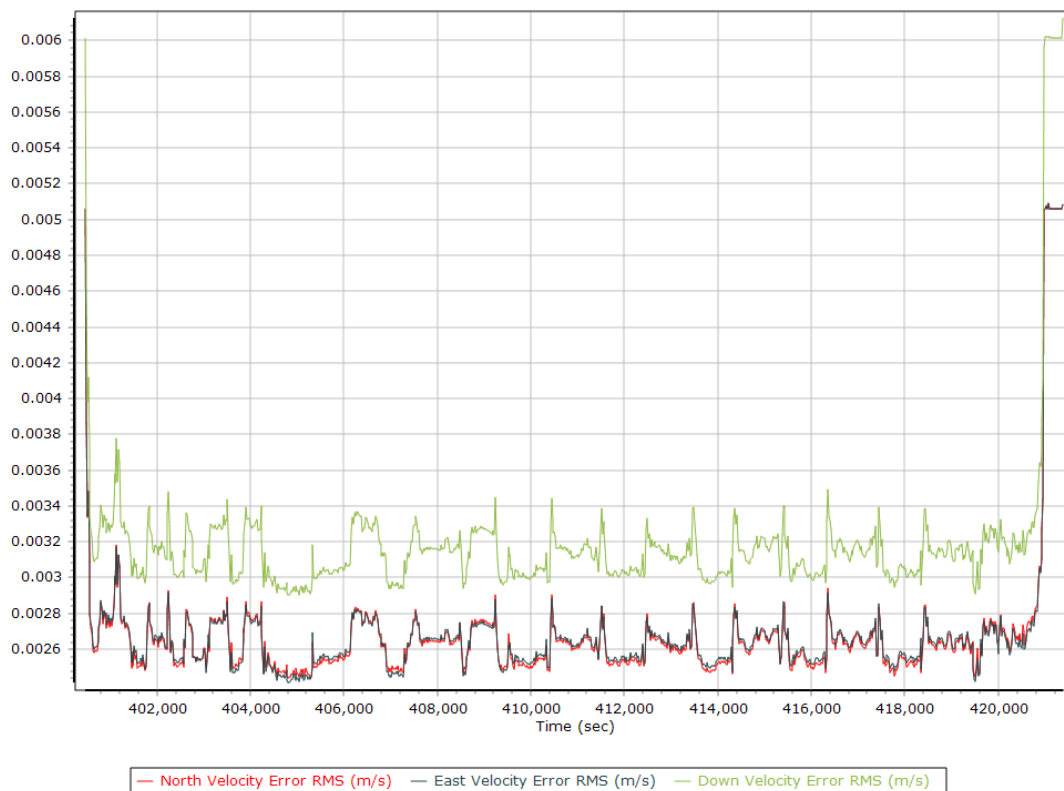


## Smoothed Performance Metrics

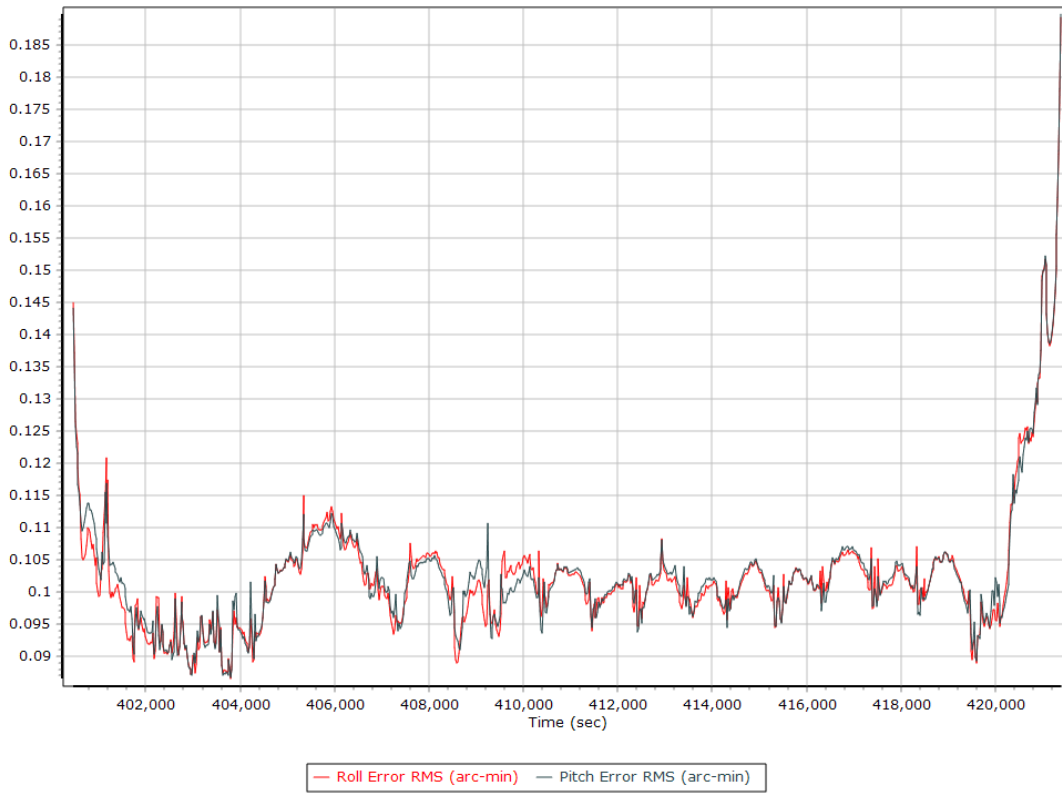
### Position Error RMS (m)



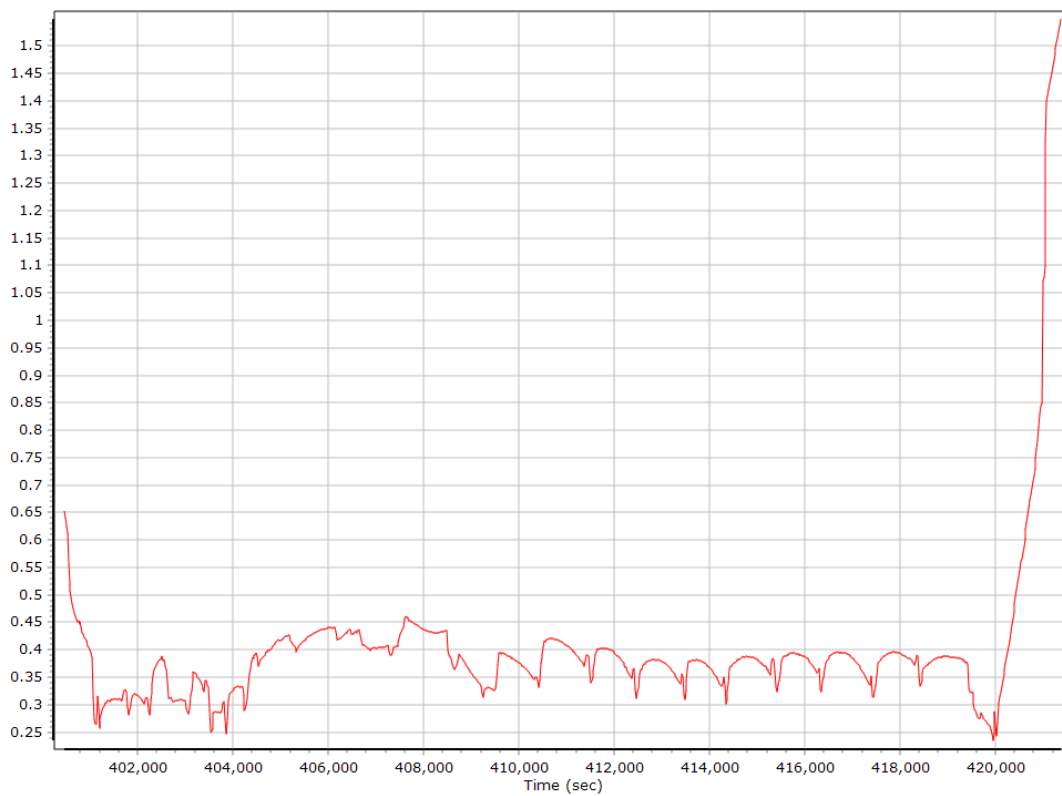
### Velocity Error RMS (m/s)



### Roll/Pitch Error RMS (arc-min)

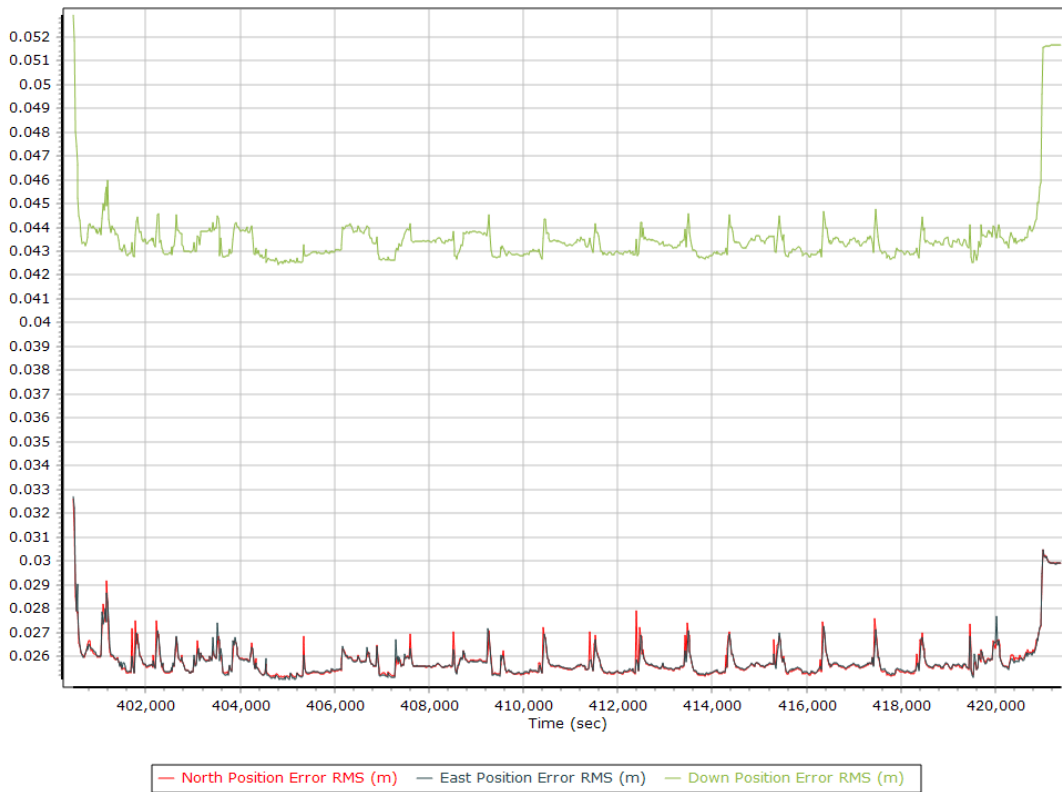


### Heading Error RMS (arc-min)

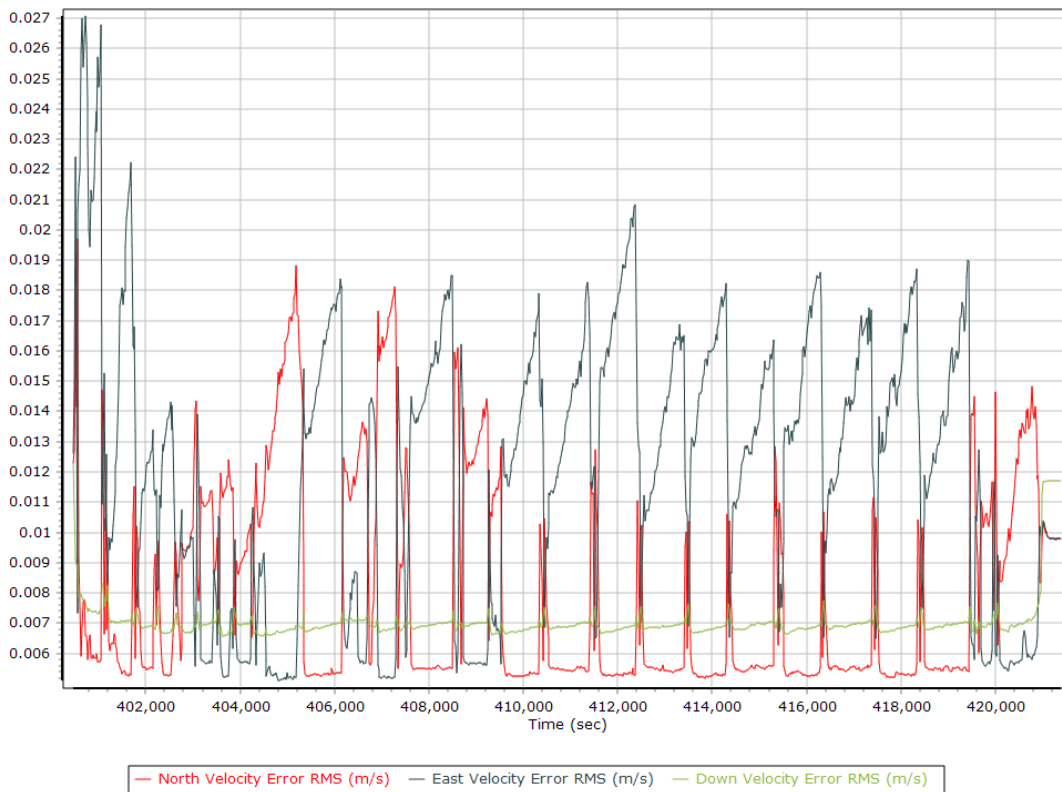


## Forward Processed Performance Metrics

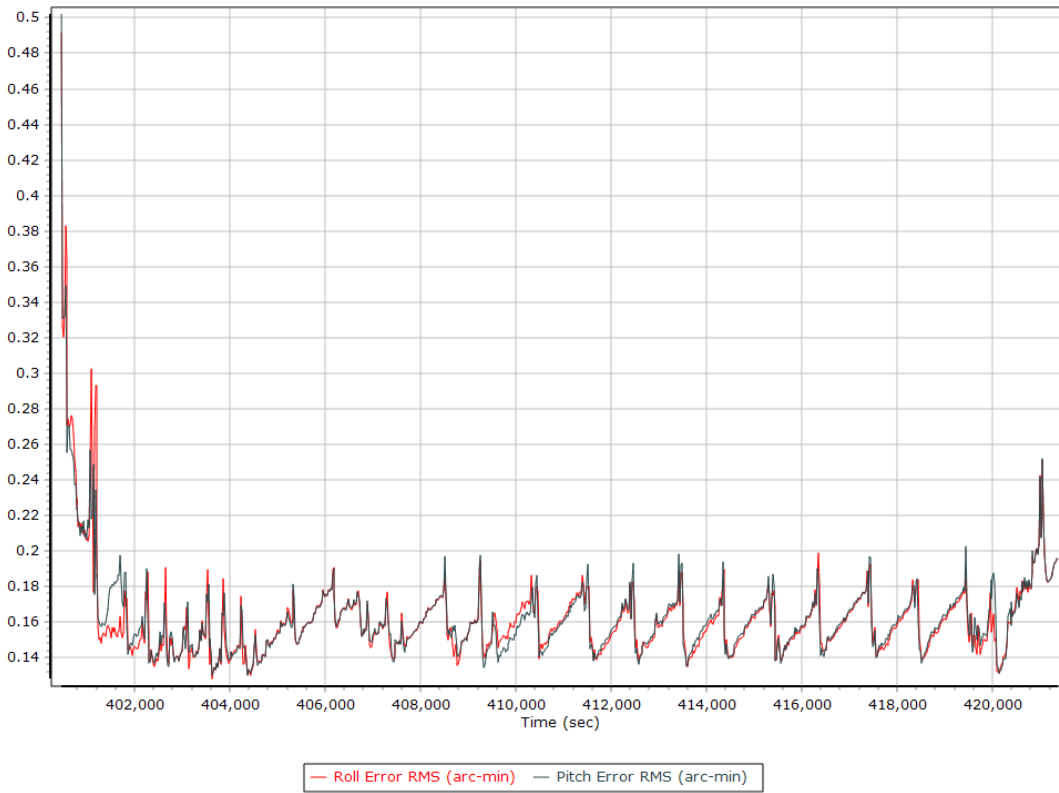
### Position Error RMS (m)



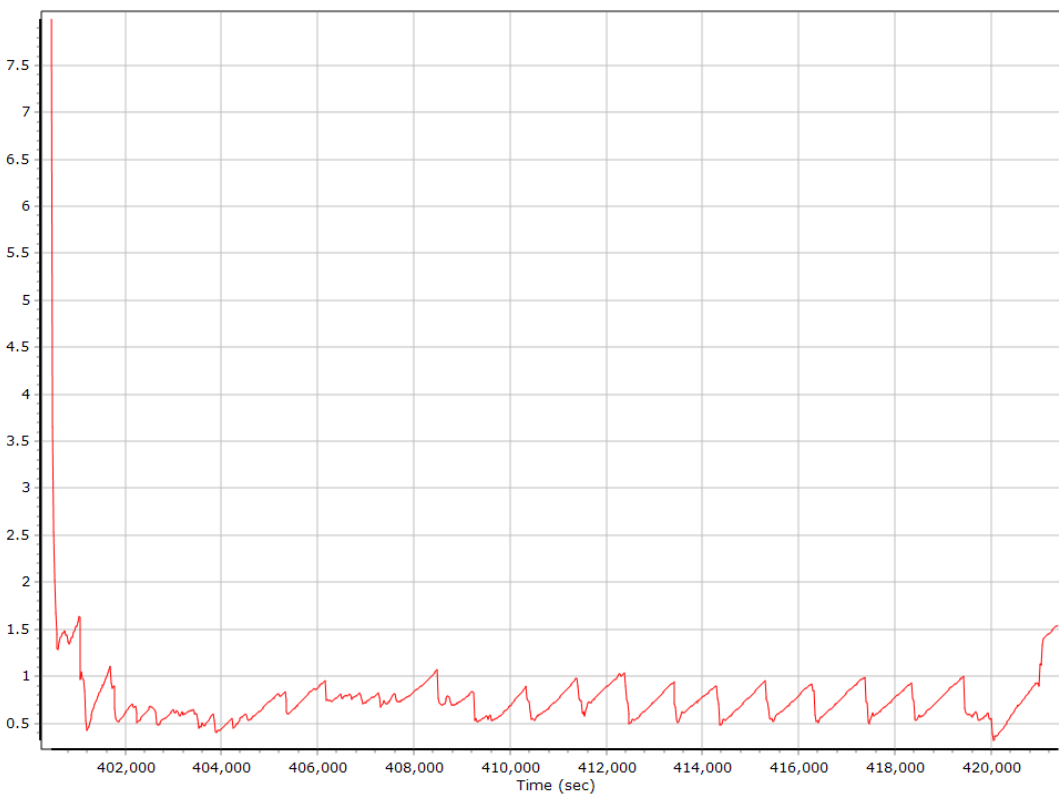
### Velocity Error RMS (m/s)



### Roll/Pitch Error RMS (arc-min)

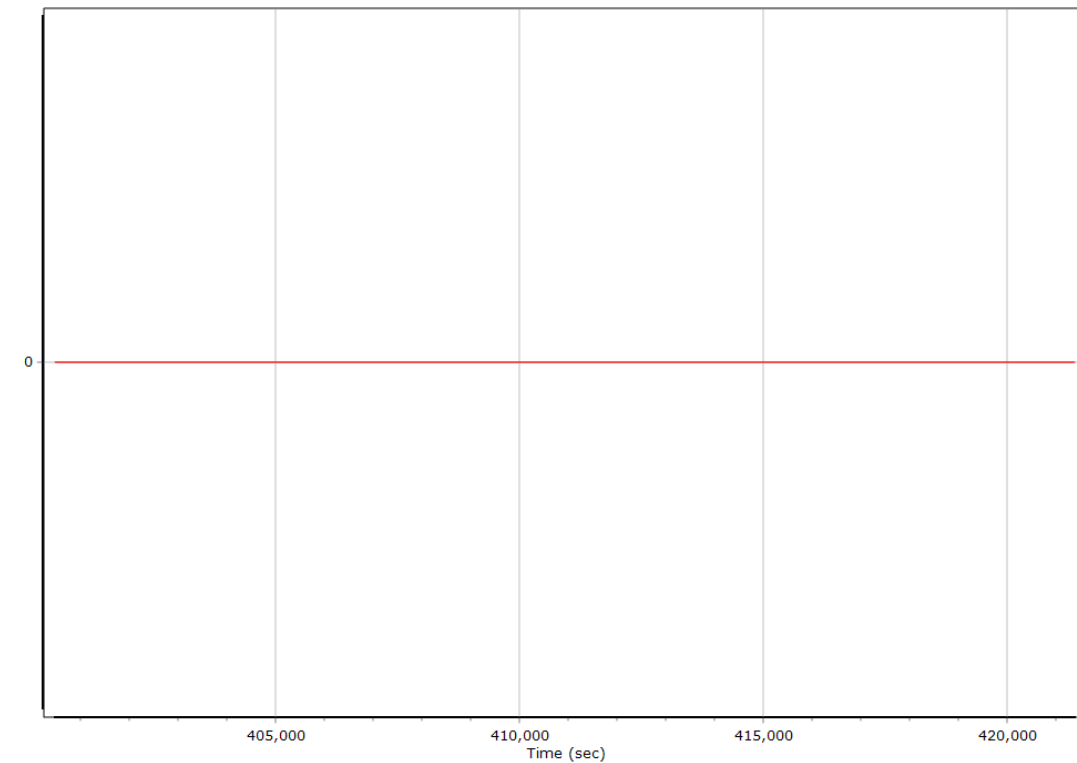


### Heading Error RMS (arc-min)



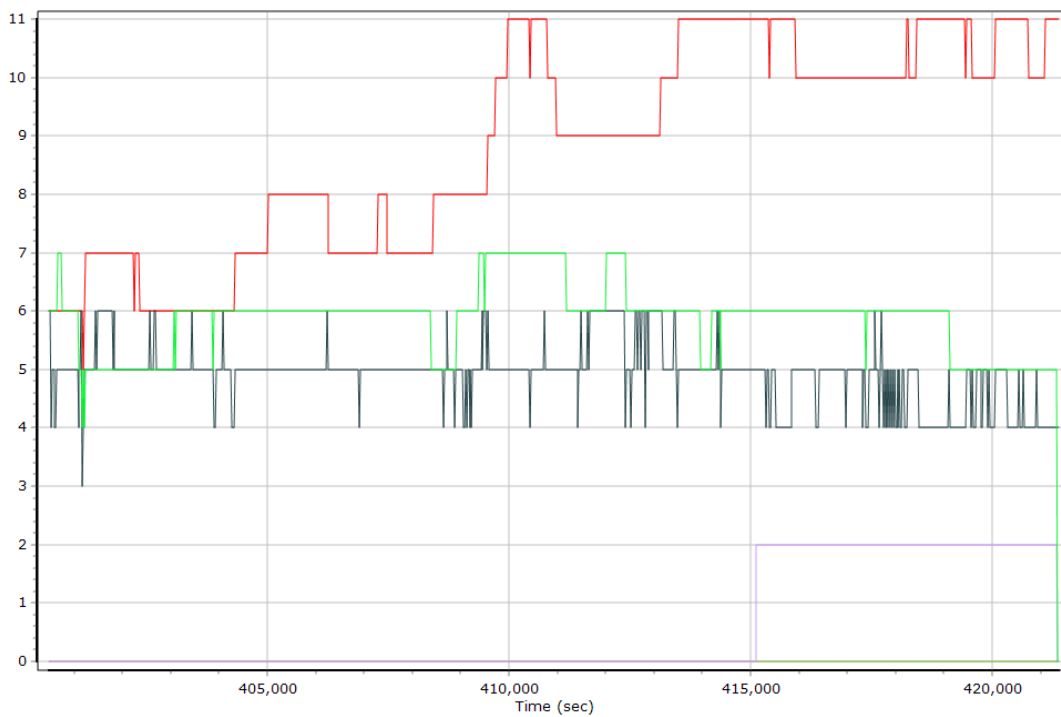
## Forward Processed Solution Status

### Processing Mode



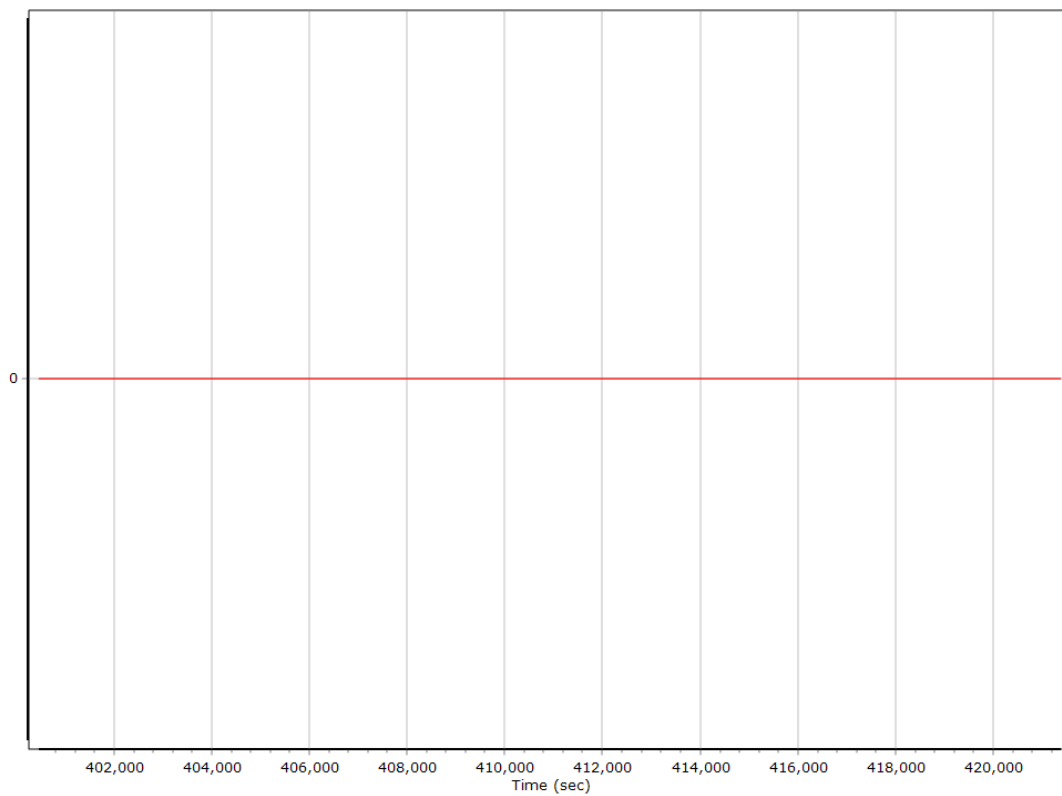
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

### Number of Satellites



— Number of GPS Satellites — Number of GLONASS Satellites — Number of QZSS Satellites  
— Number of BEIDOU Satellites — Number of GALILEO Satellites

## Baseline Length





## Export Summary

Export file	sbet_210401_A_5060420_nad2011_FINAL.shp		
Export format	Shapefile		
Solution in use	Post-processed		
Output rate	Specified Distance Interval		
Distance Interval (m)	10.000		
Reference to Output lever arm (m)	0.000	0.000	0.000
Reference mounting angles (deg)	0.000	0.000	0.000
Output units (Coordinate / Lat & Lon)	Meter	Deg Decimal	
Export start time	400408.002 (04/01/2021 15:13:28)		
Export end time	421393.004 (04/01/2021 21:03:13)		
Height option	Ellipsoid Height		
WGS84 height flag	False		
Grid	Universal Transverse Mercator		
Zone	UTM North 14 (102W to 96W)		
Datum	NAD83 (2011)		
Ellipsoid	GRS 1980		
Local Transformation	NONE		
Target Epoch	2010		