

Dewberry & Davis LLC 1000 N. Ashley Drive, Suite 801 Tampa, FL 33602-3718 813.225.1325 813.225.1385 fax www.dewberry.com

Virginia West Chesapeake, LiDAR Appendix B: LEG IMU and GPS Processing Reports

Report Date: 3/17/2018

SUBMITTED BY:

Dewberry

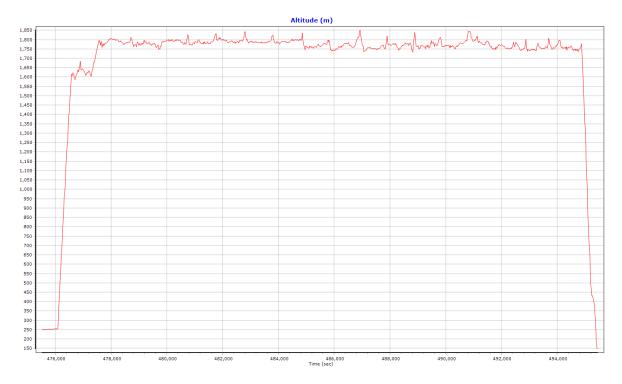
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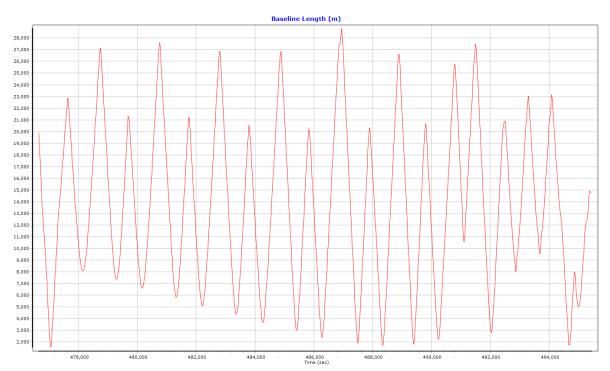
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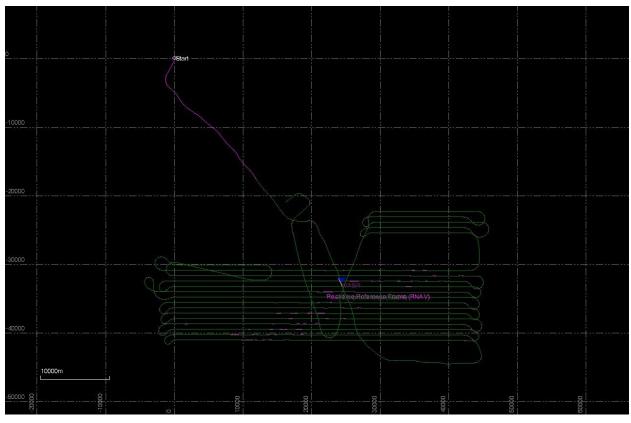
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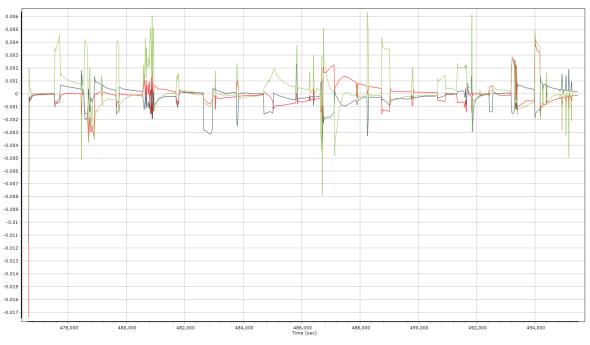
Appendix B: GPS and IMU Processing Reports for Each Mission

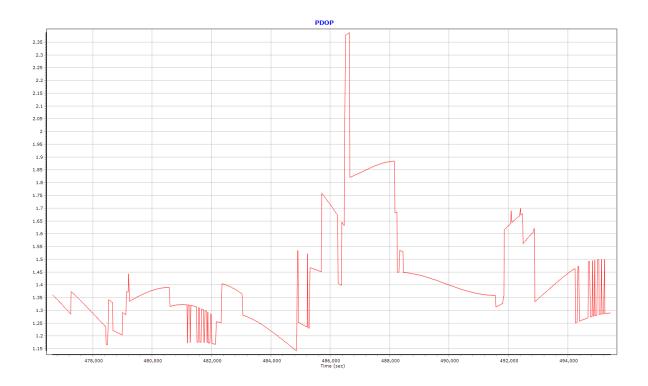
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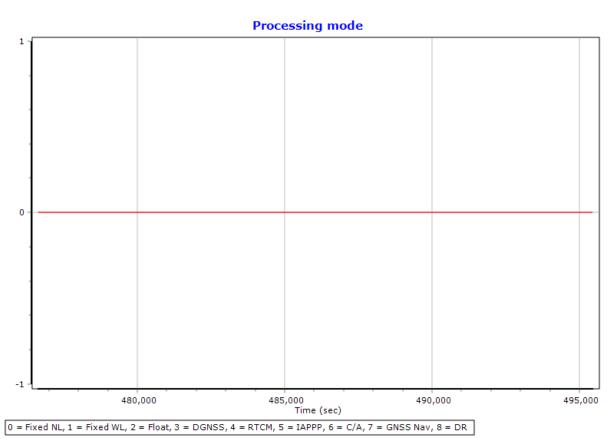


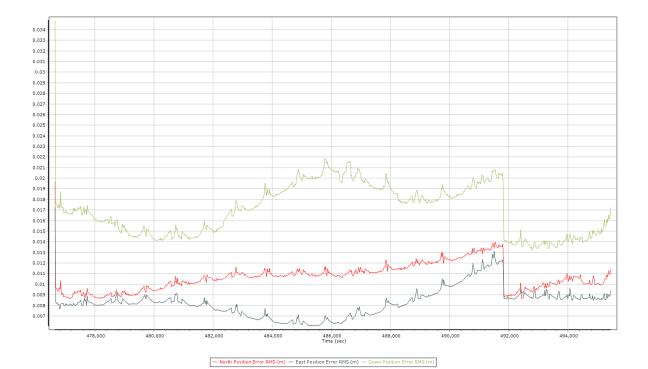


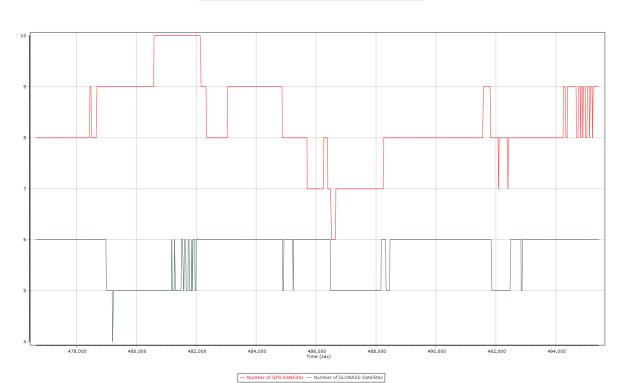


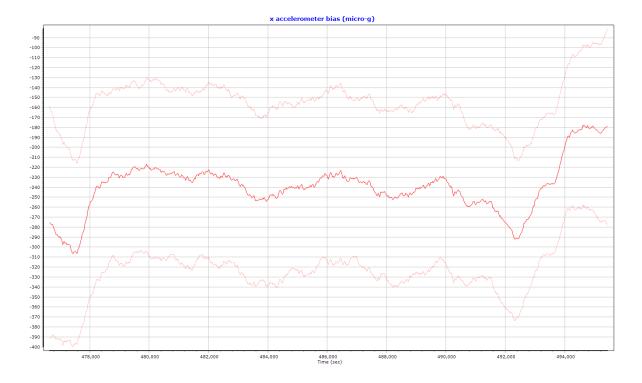


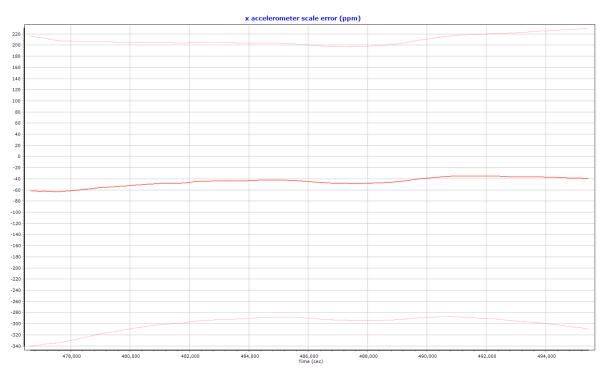


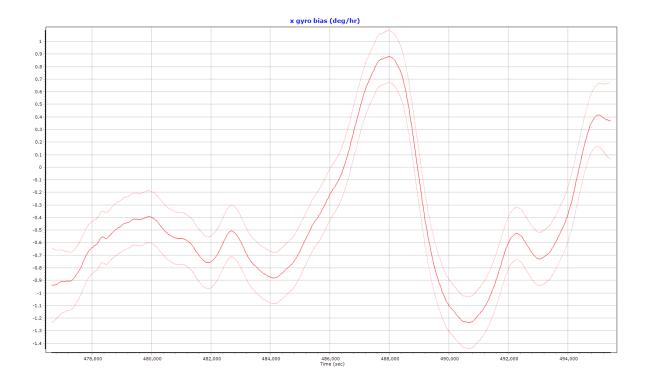


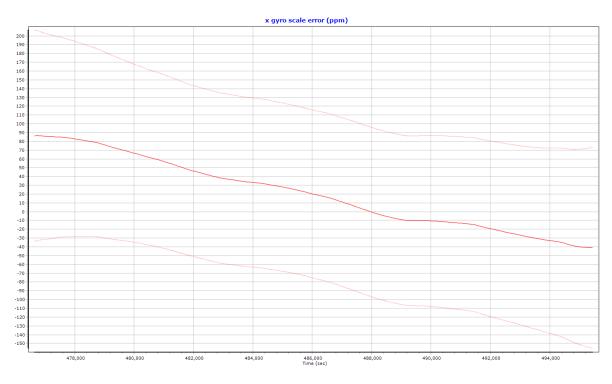


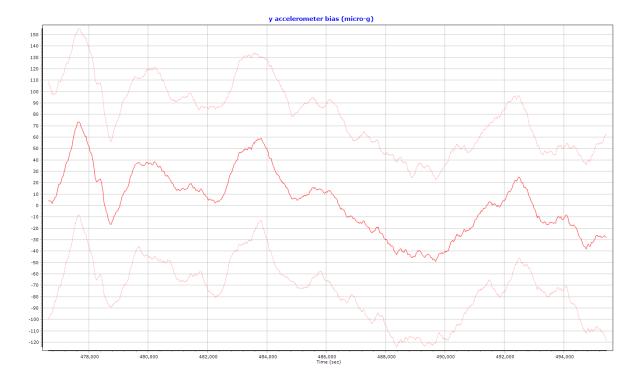


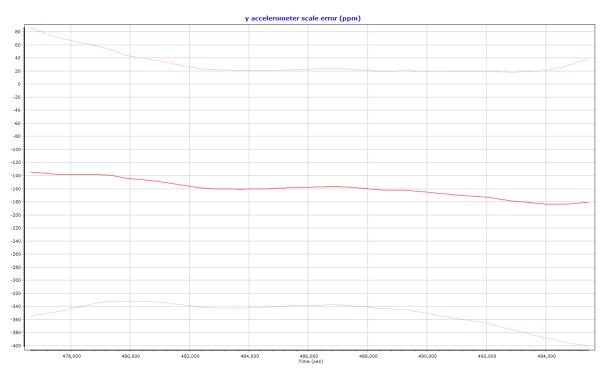


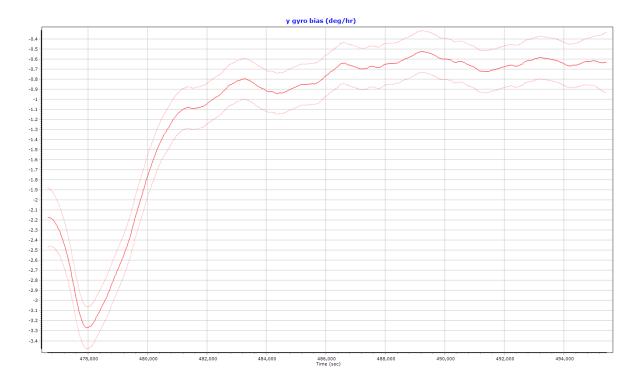


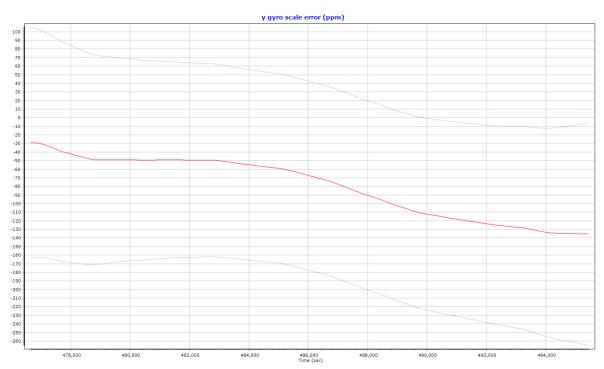


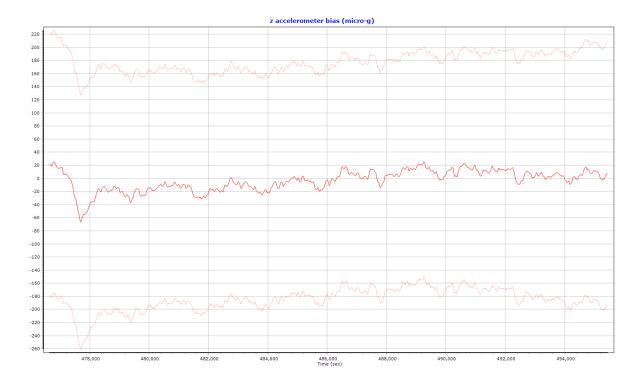


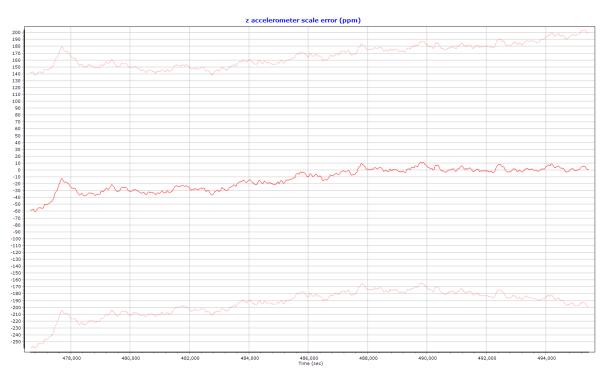


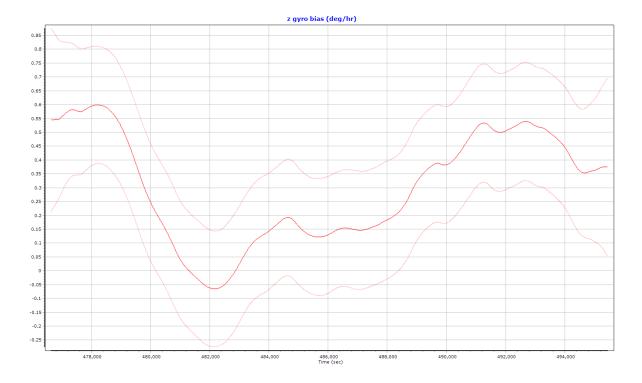


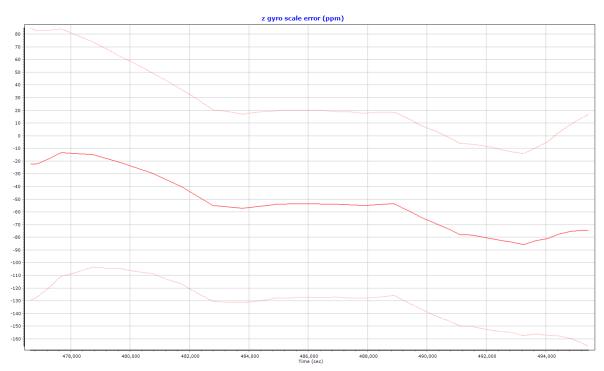




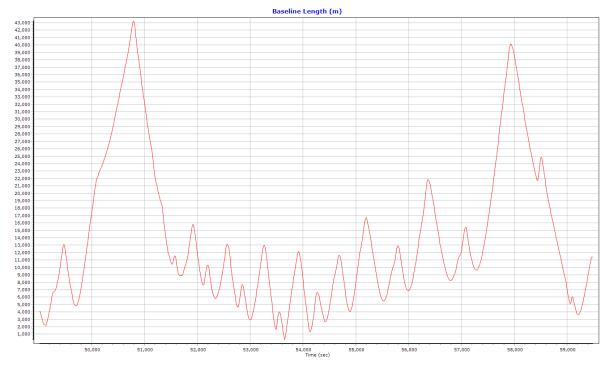


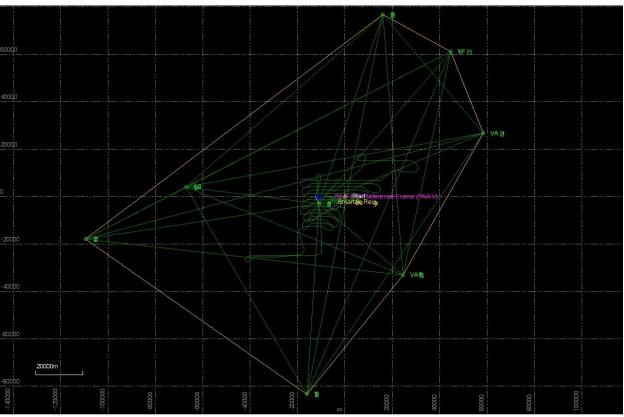




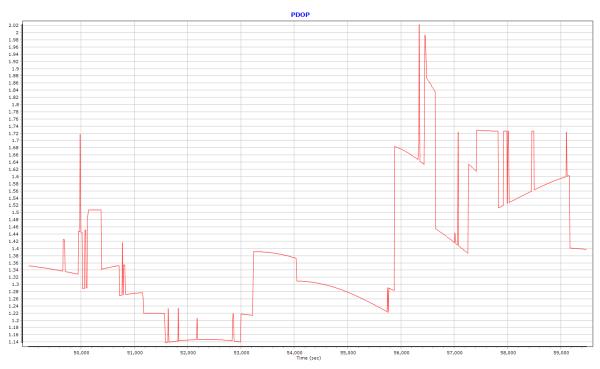


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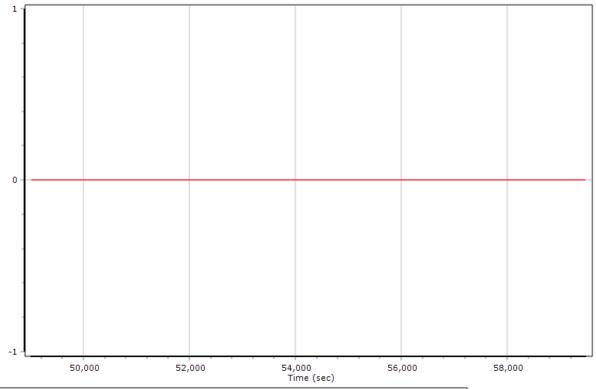




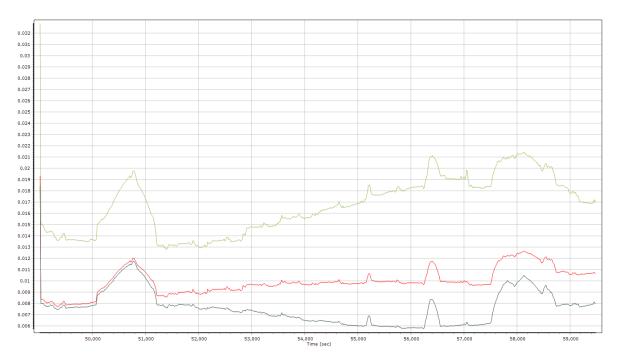




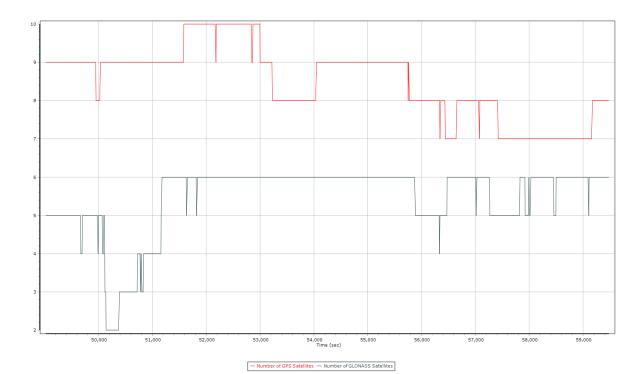


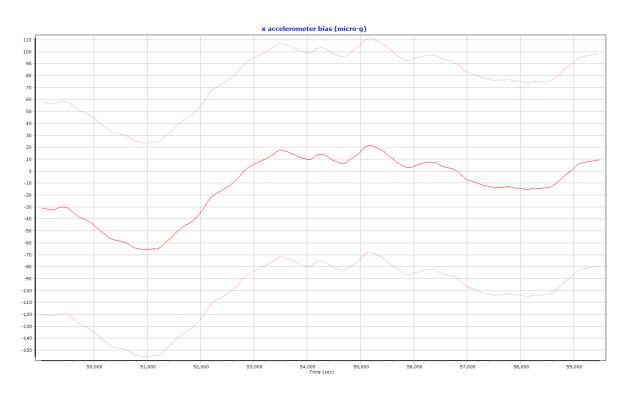


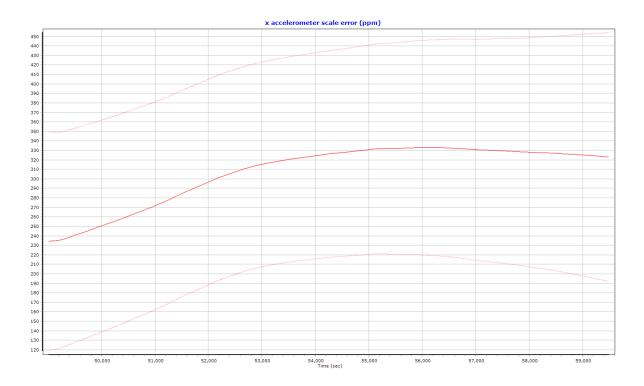
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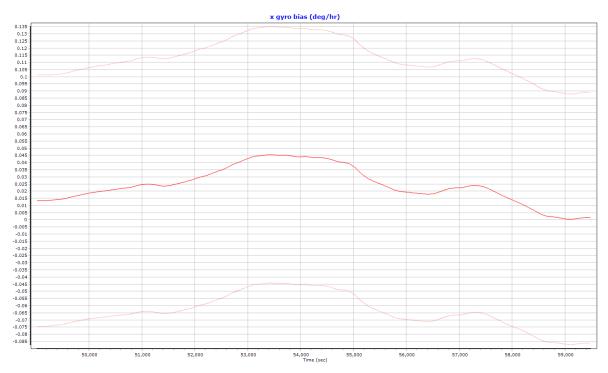


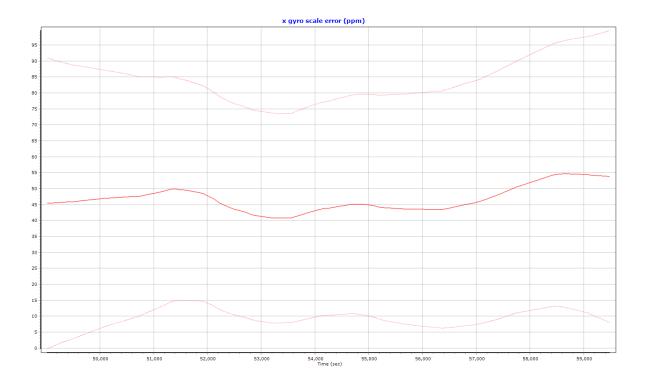
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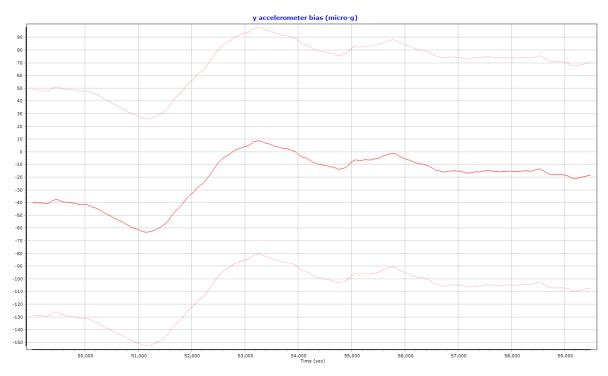


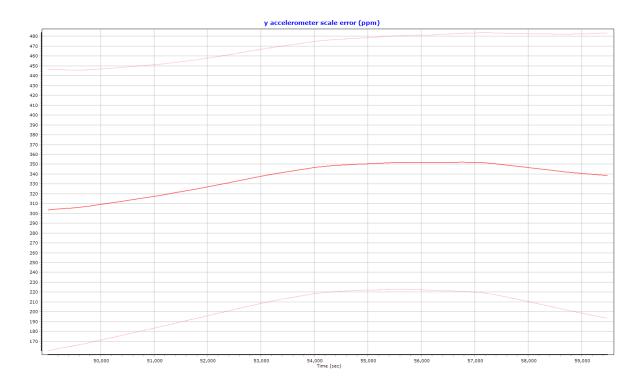


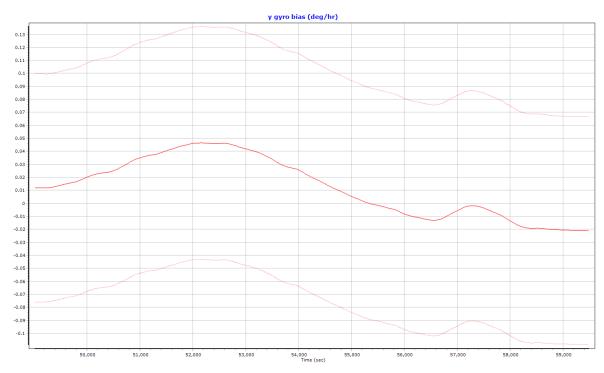


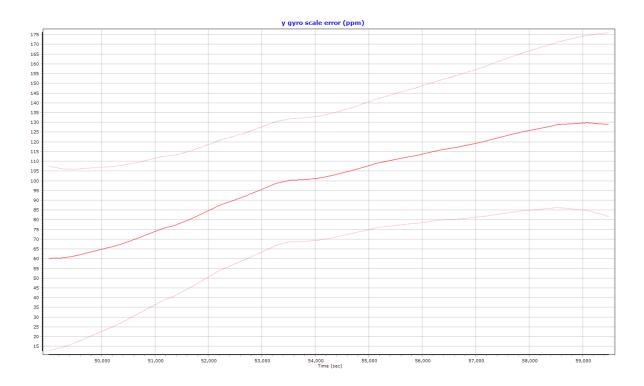


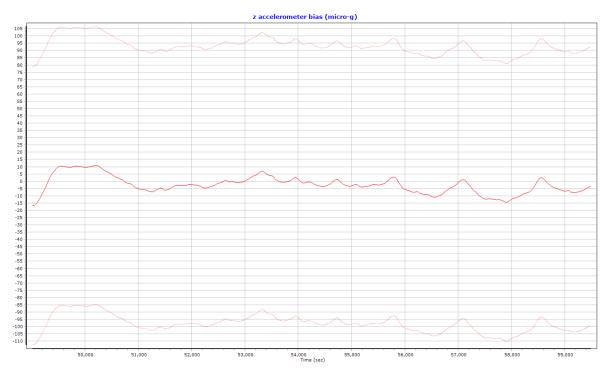


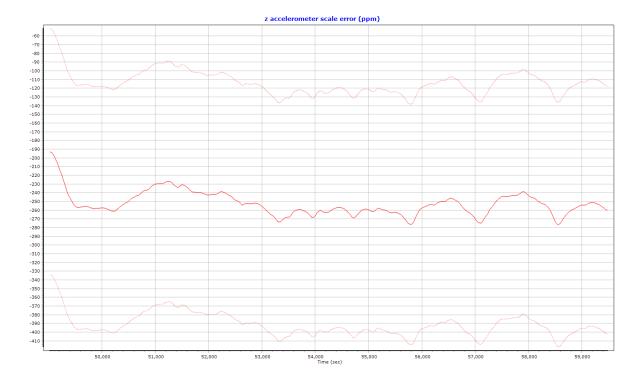


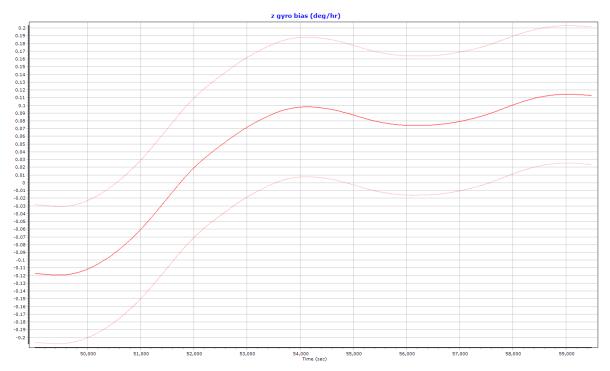


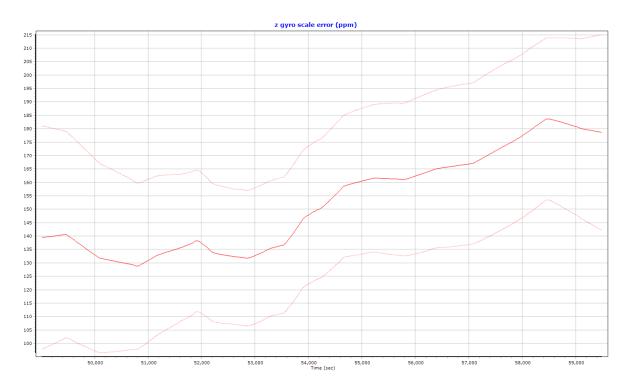




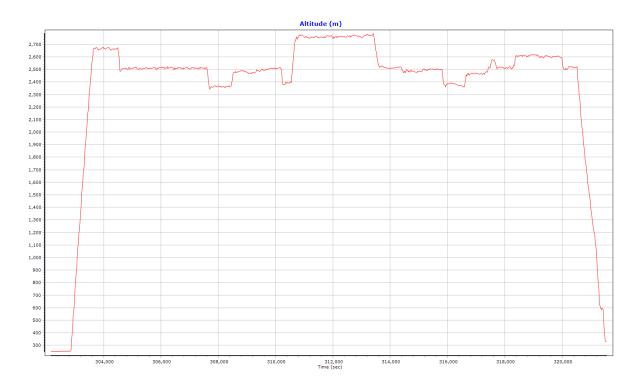


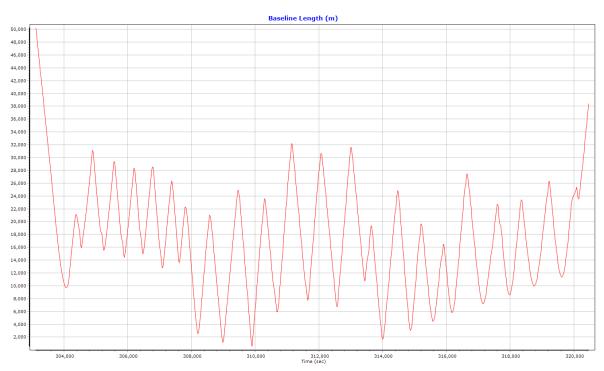


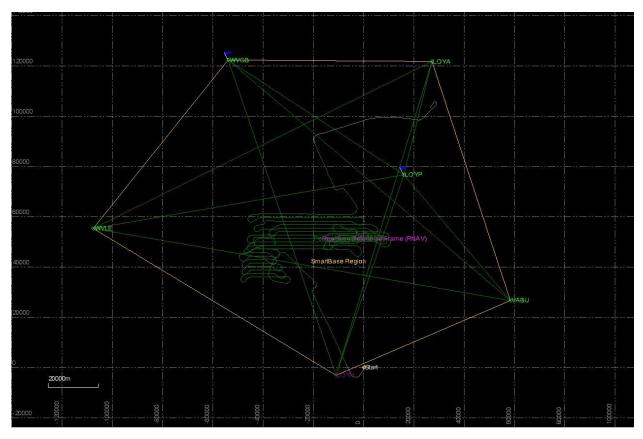




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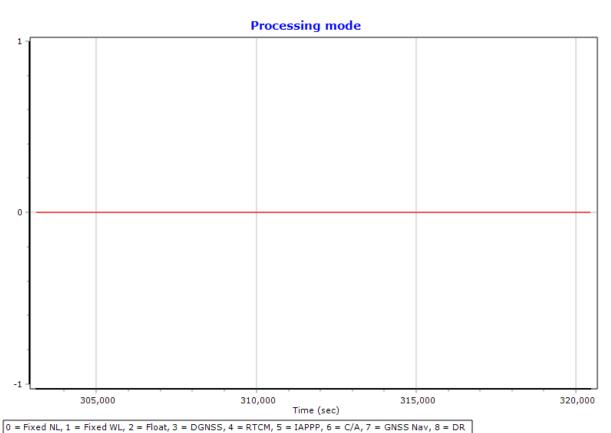


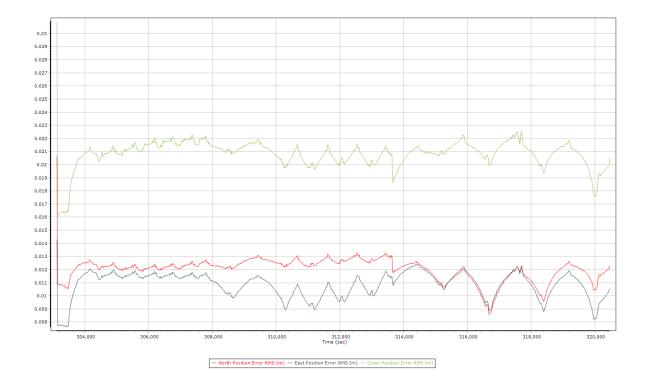


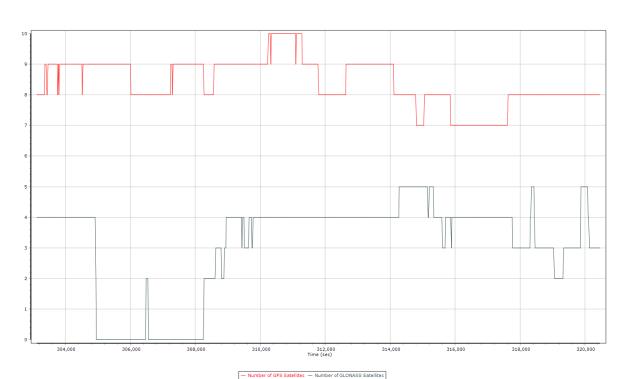


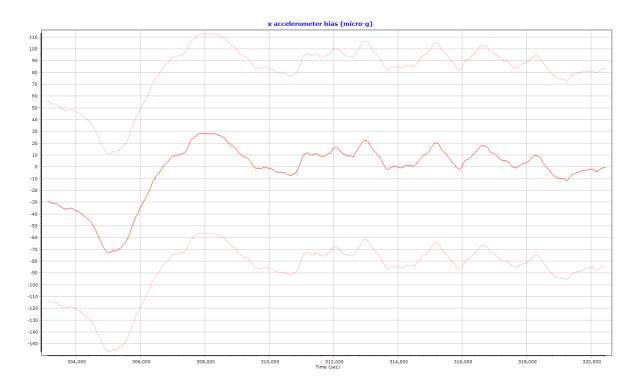
— East (m) — Down (m) → DR mode

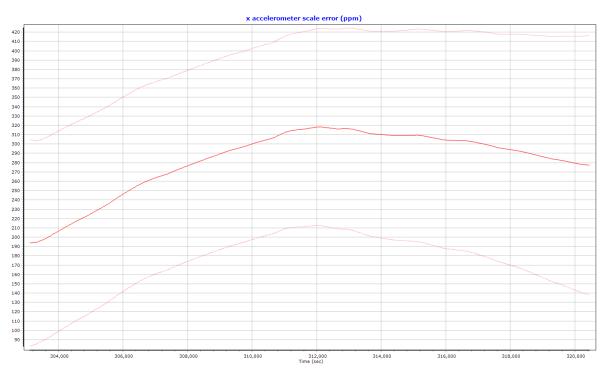


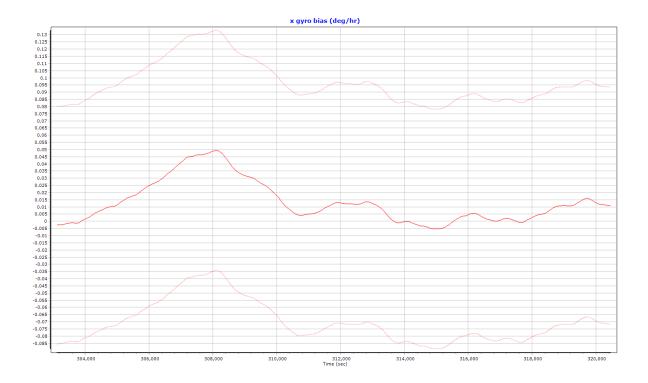


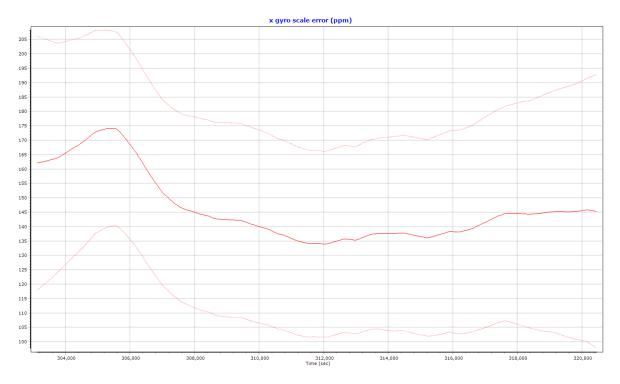


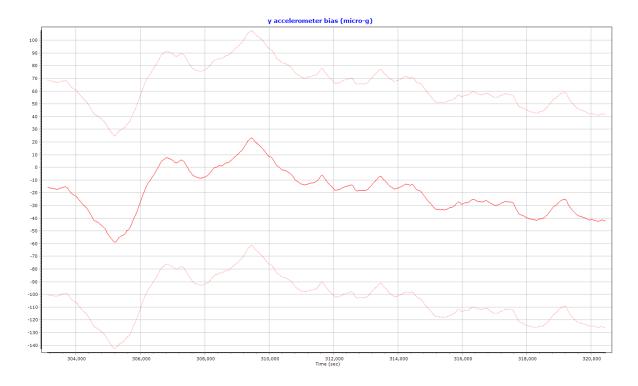


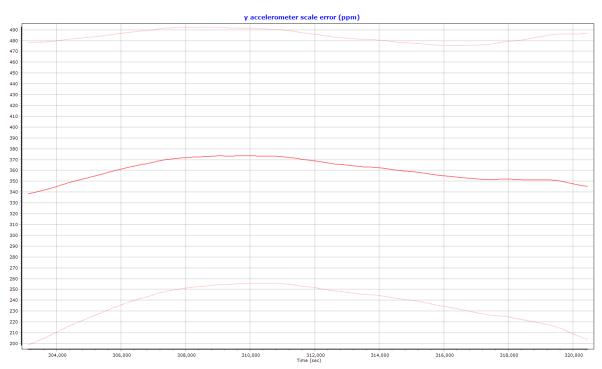


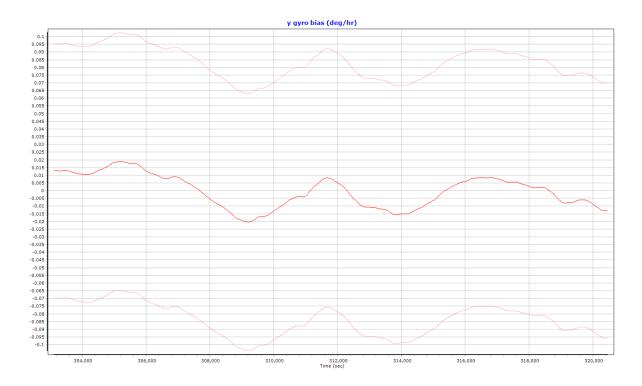


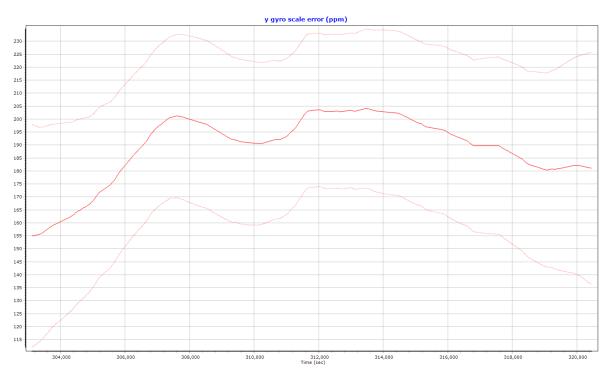


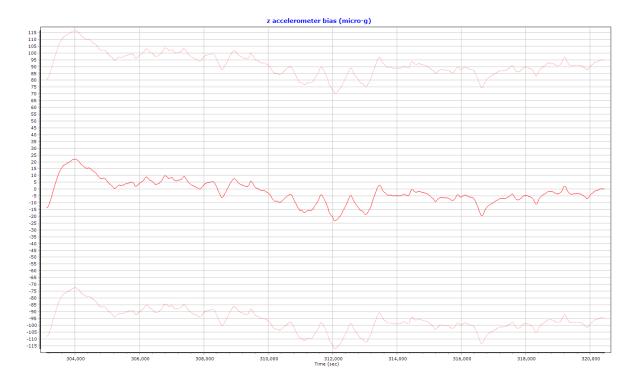


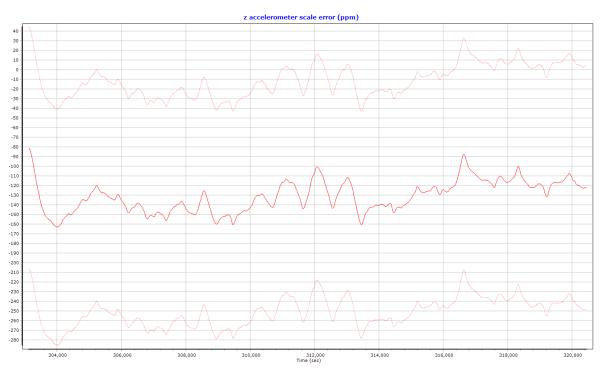


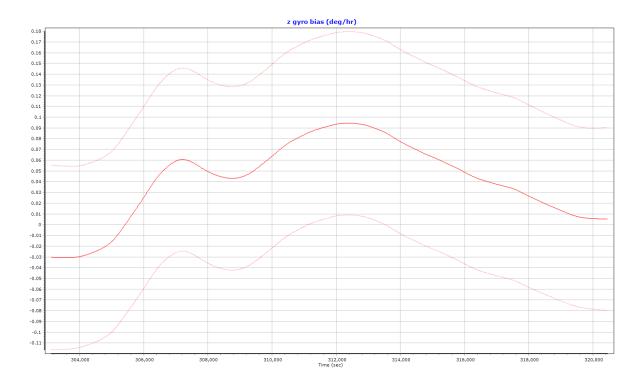


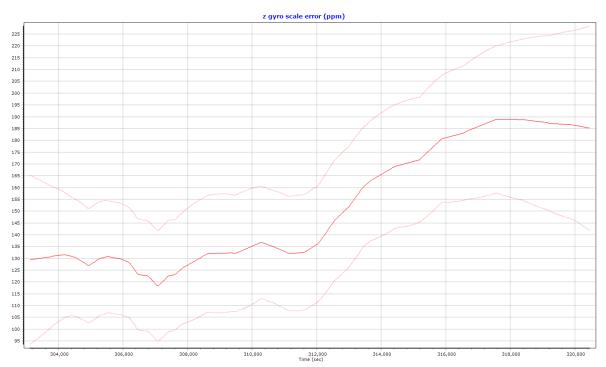




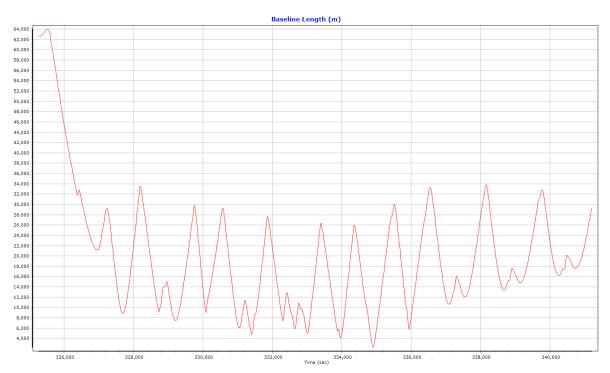


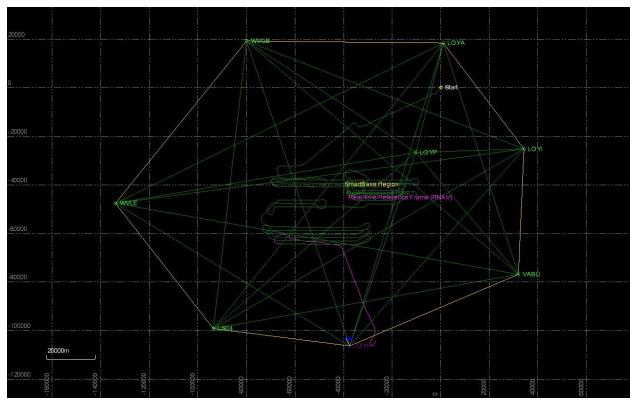




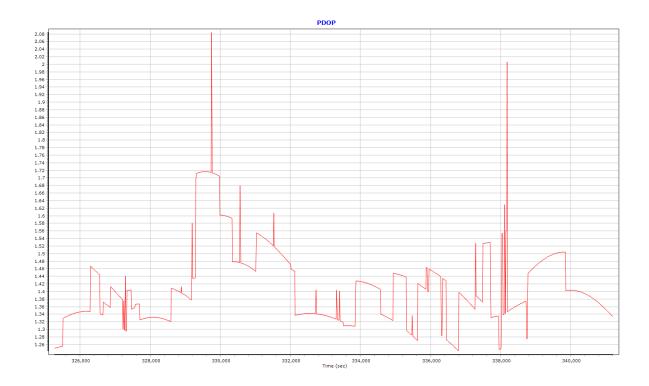


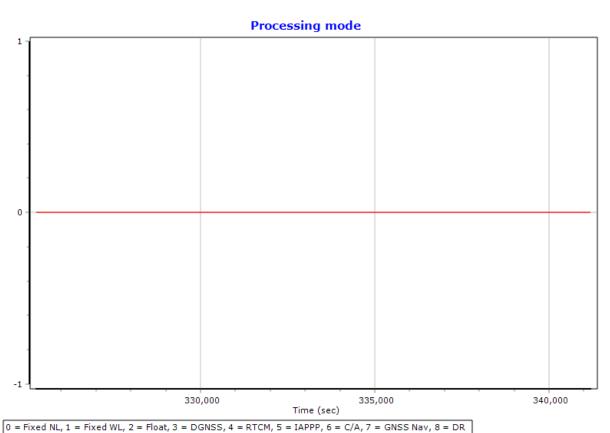


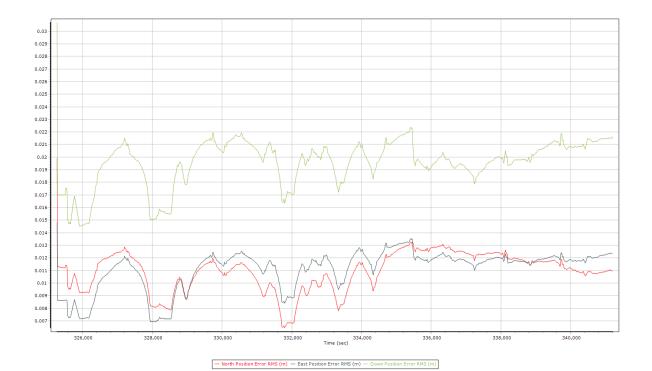


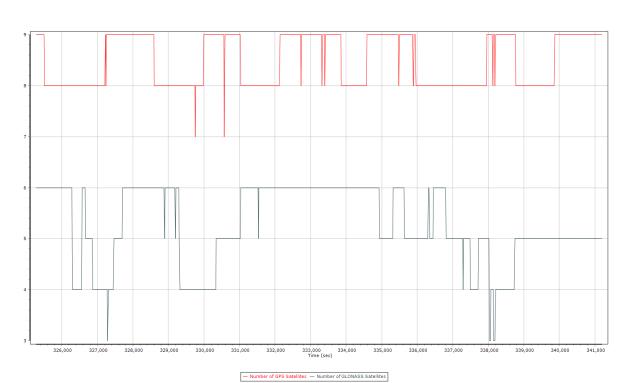


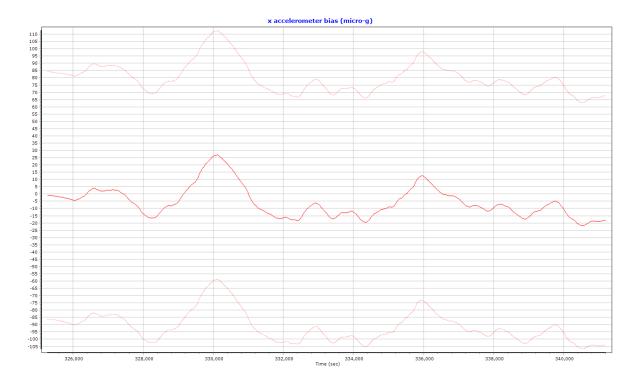


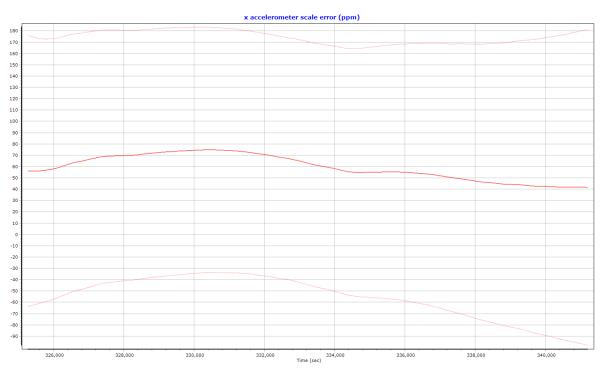


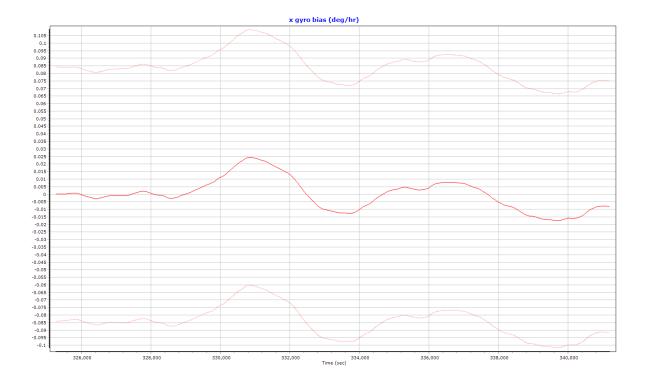


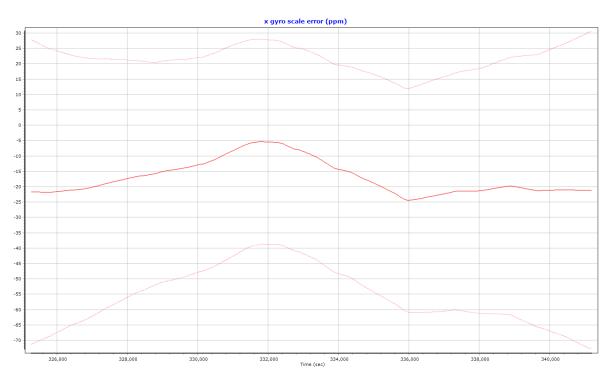


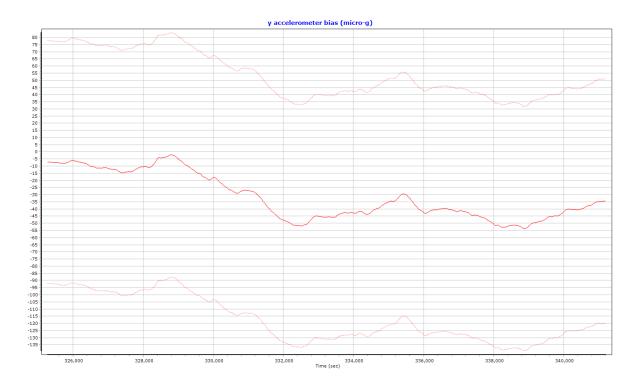


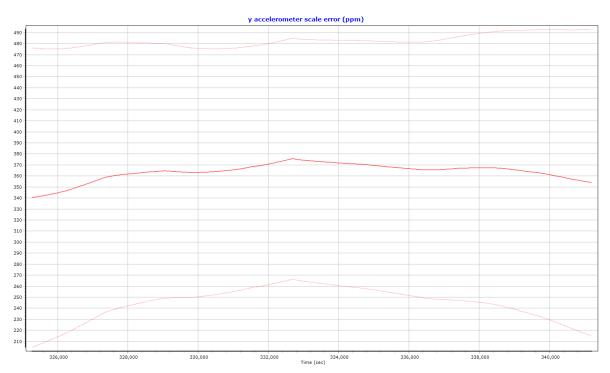


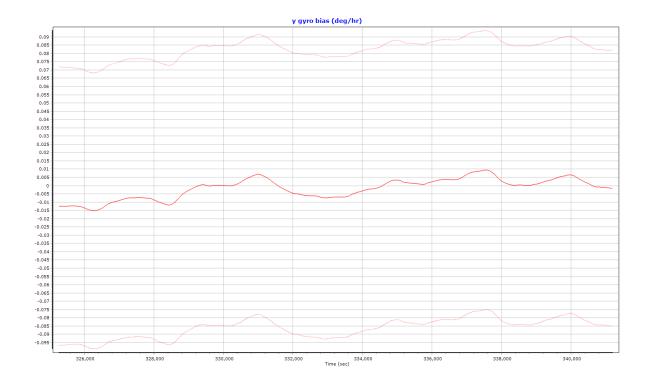


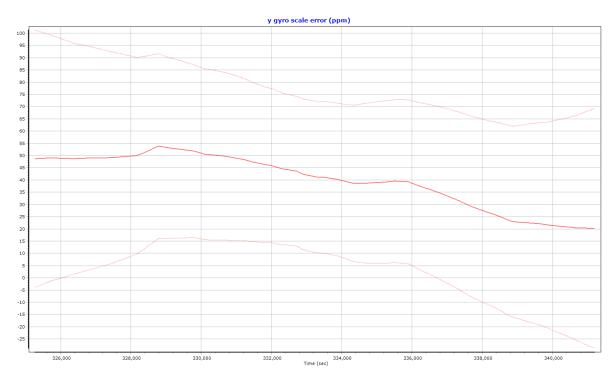


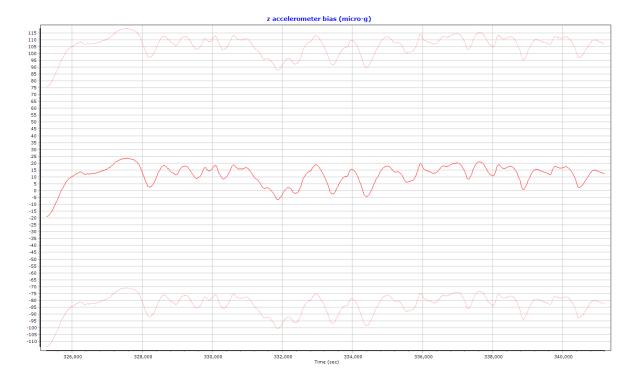


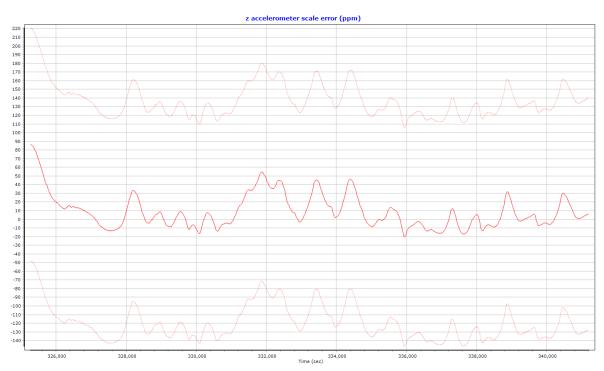


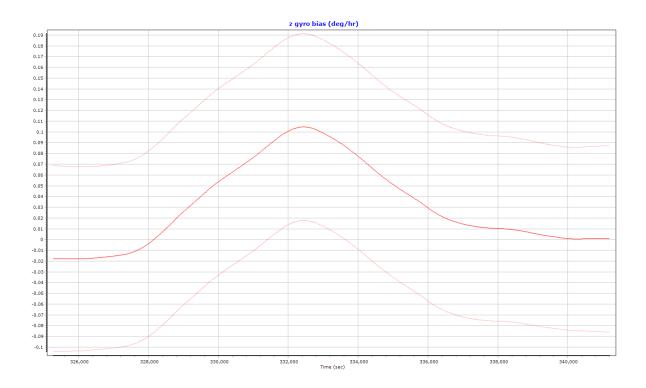


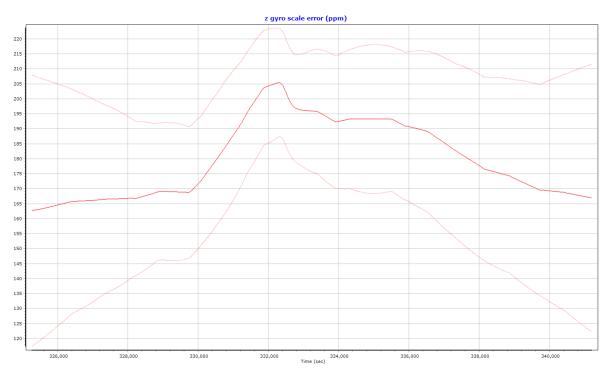


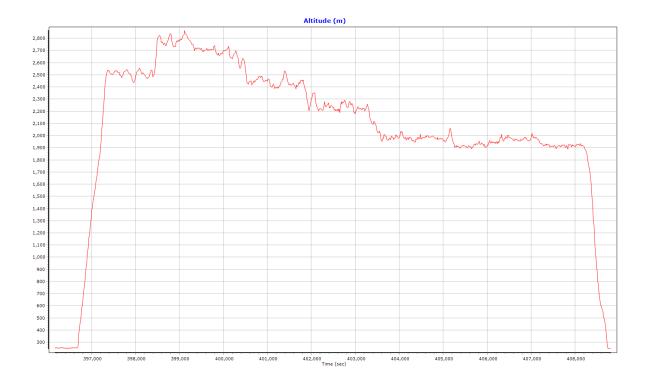


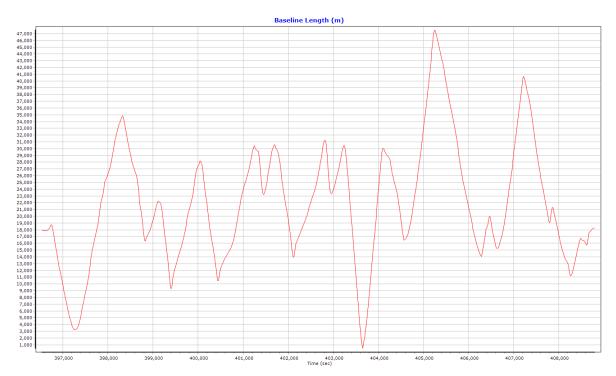


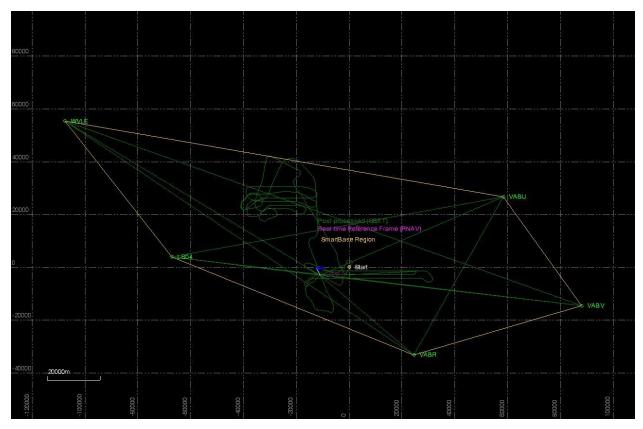






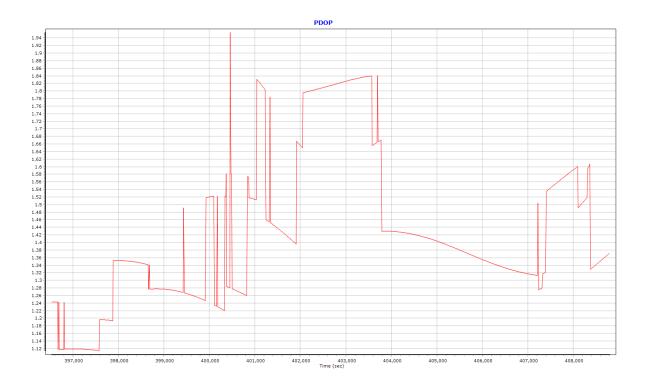


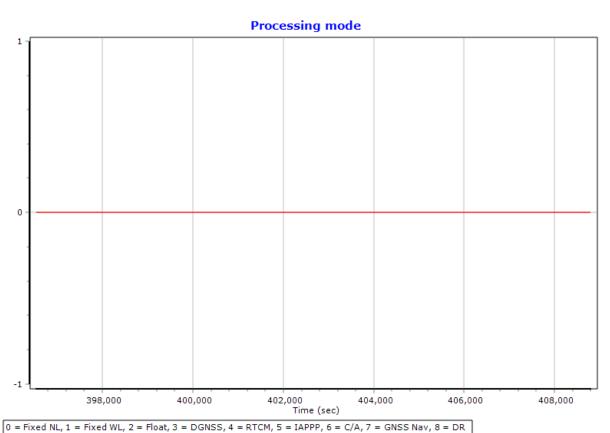


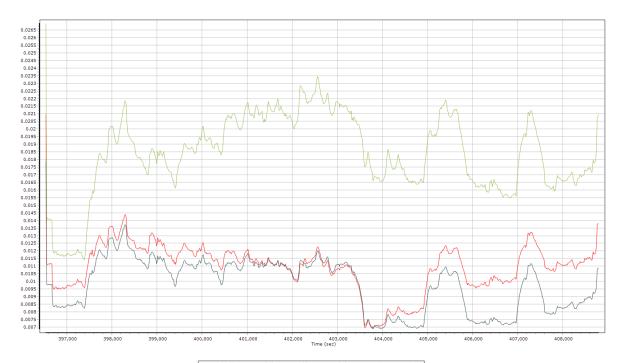




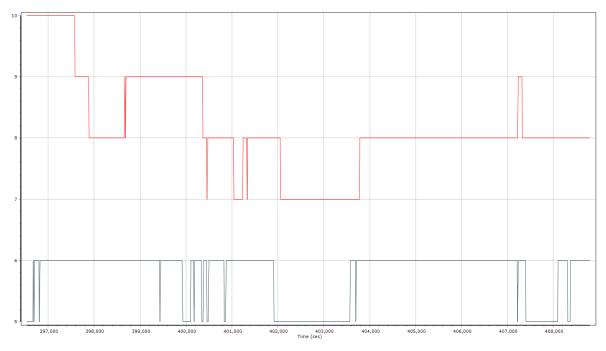
— North (m) — East (m) — Down (m) → DR mode



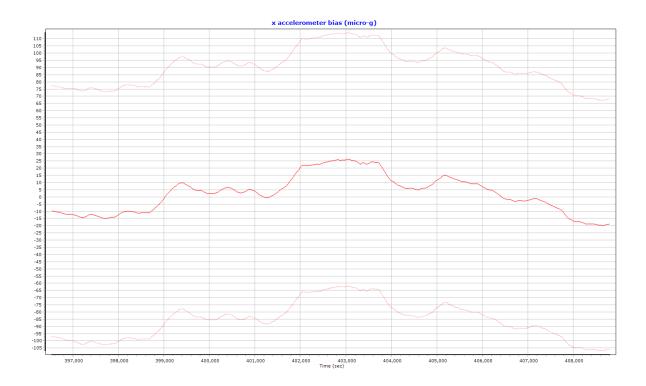


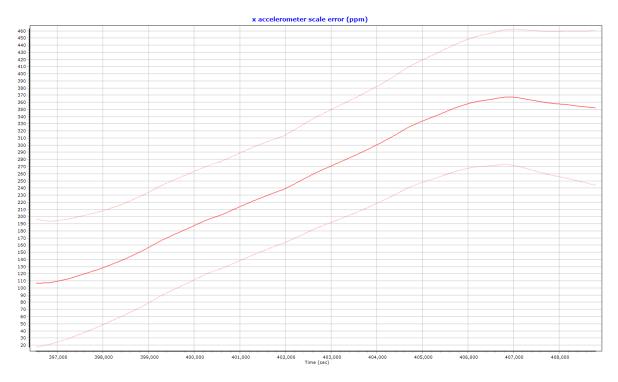


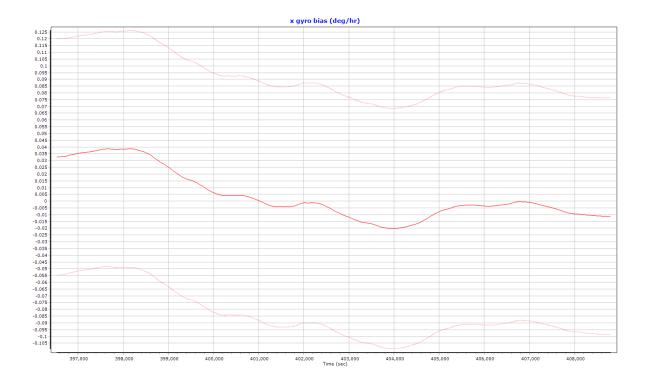


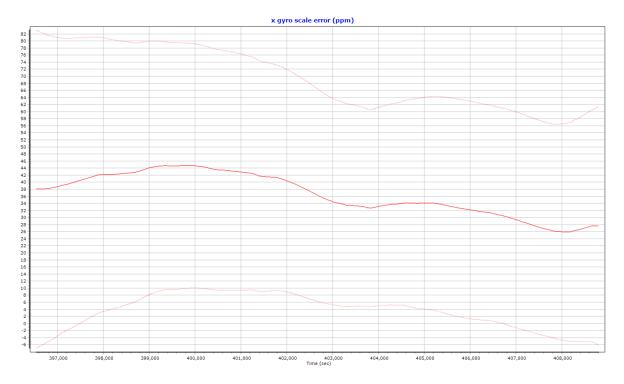


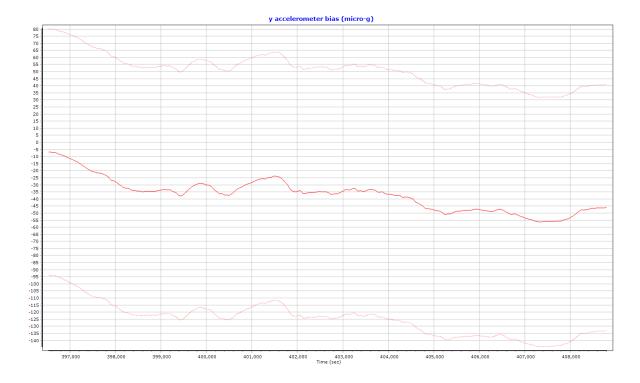
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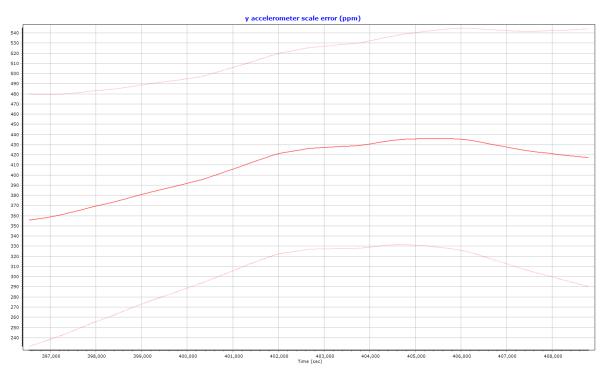


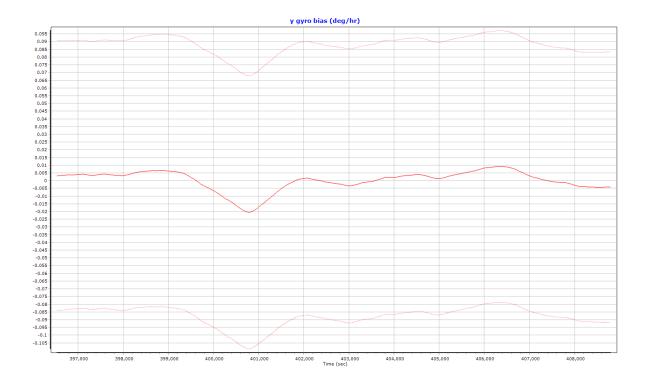


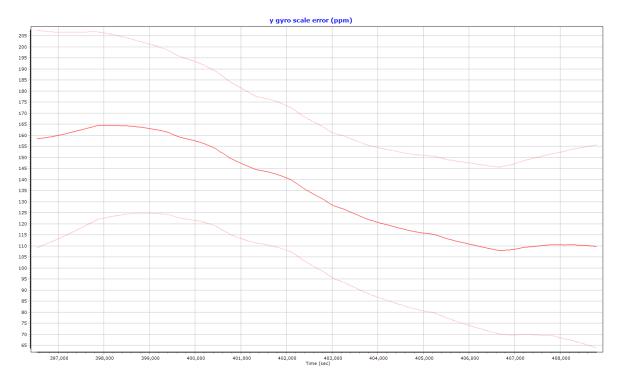


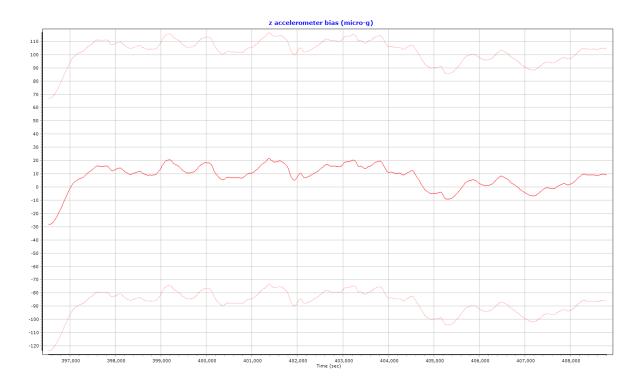


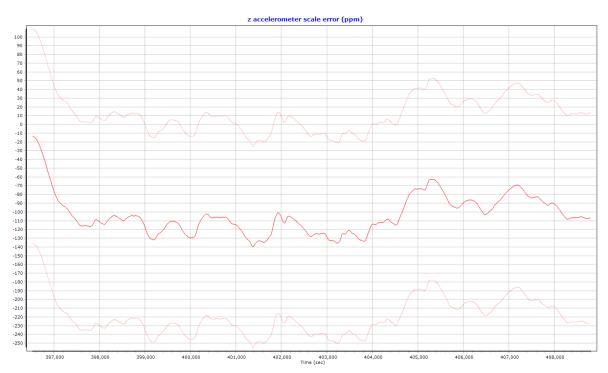


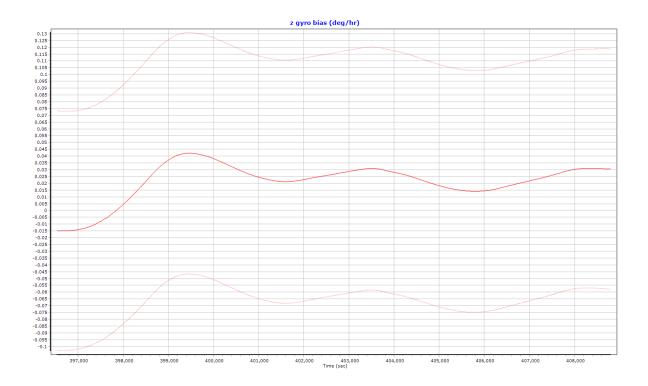


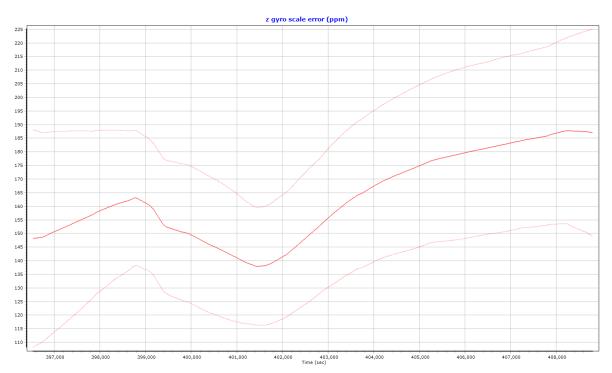


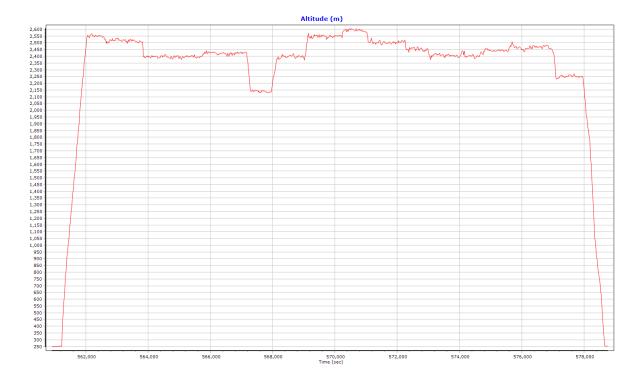


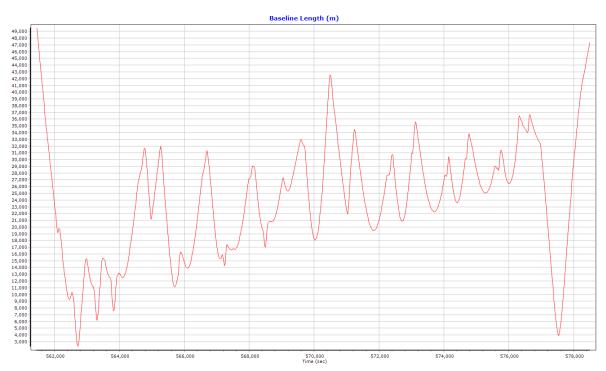


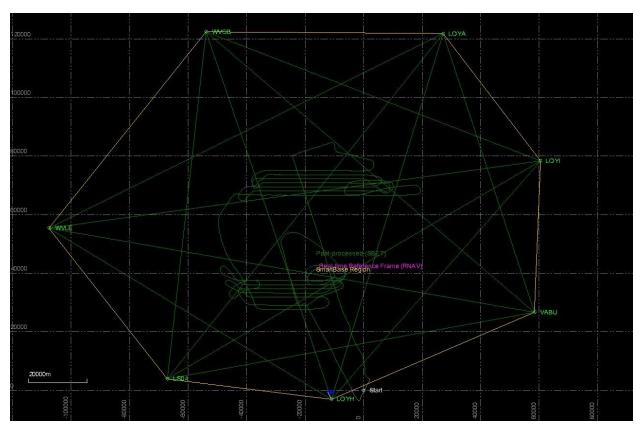


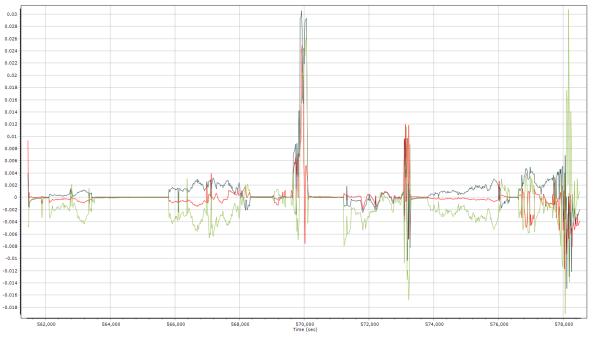


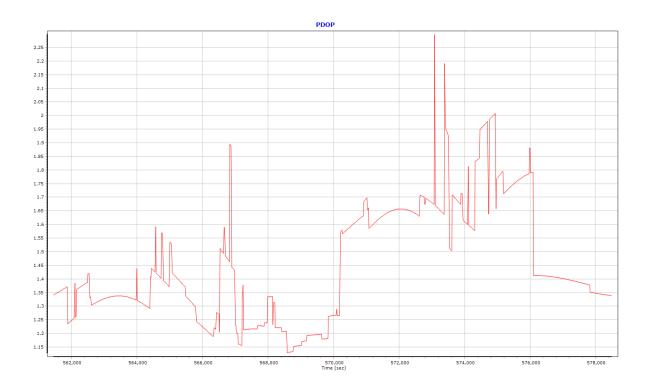


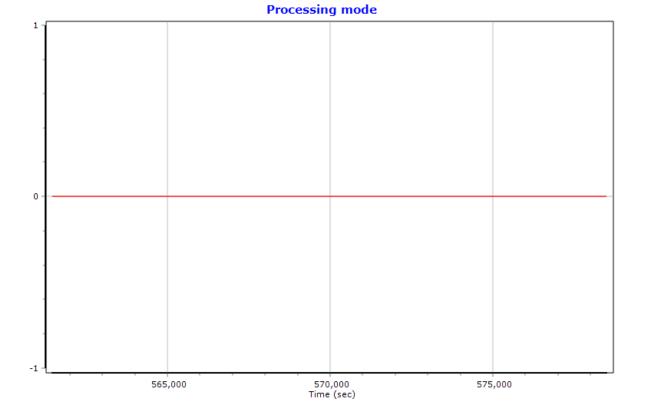










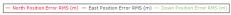


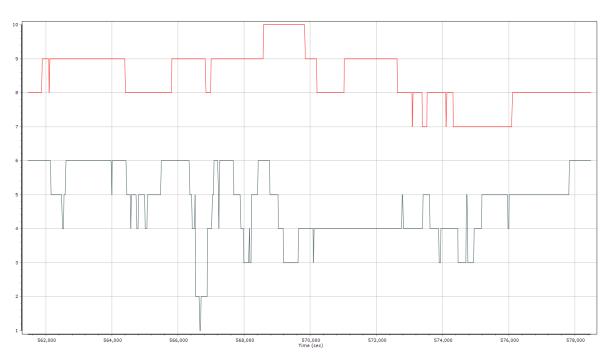
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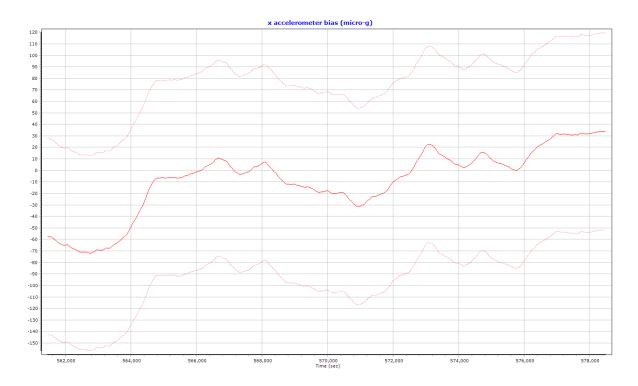
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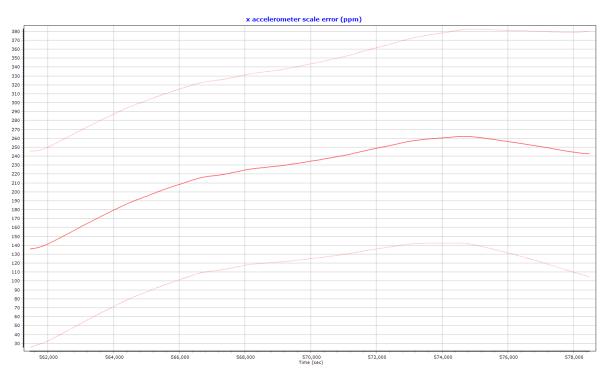


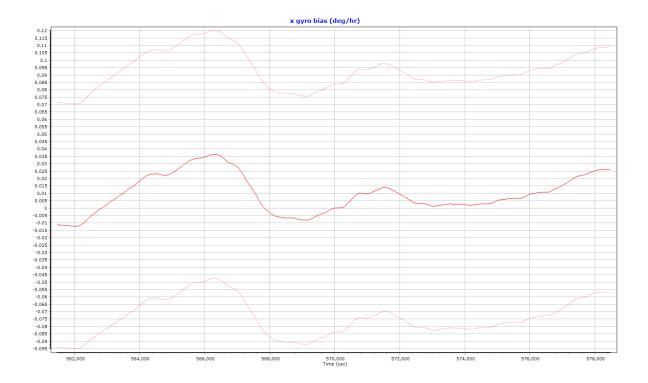


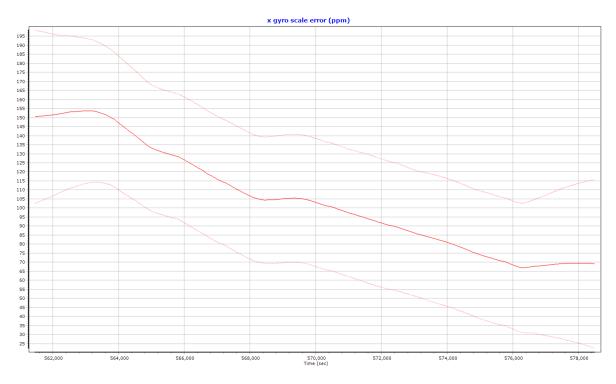


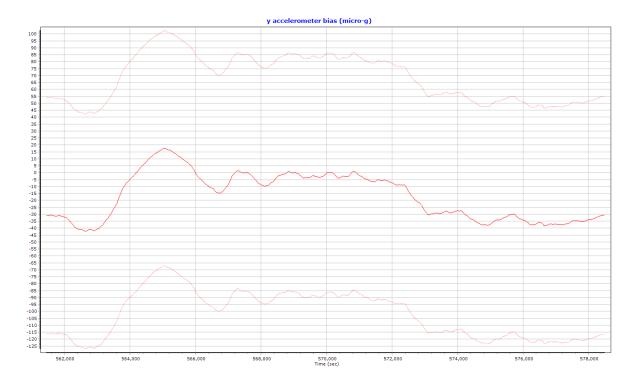
Number of GPS Satellites — Number of GLONASS Satellites

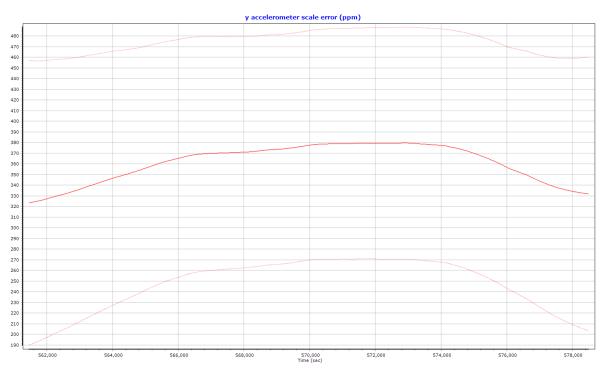


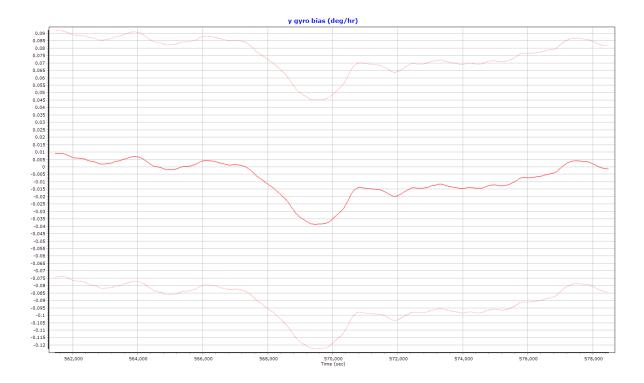


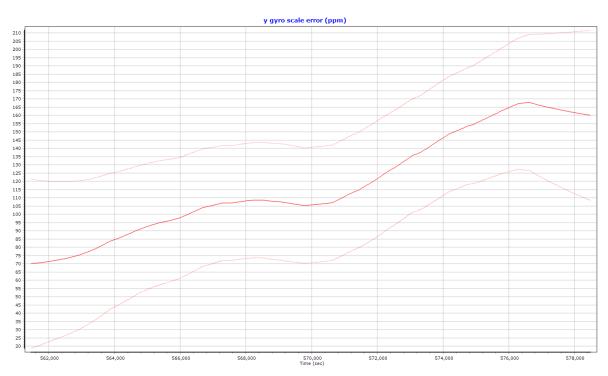


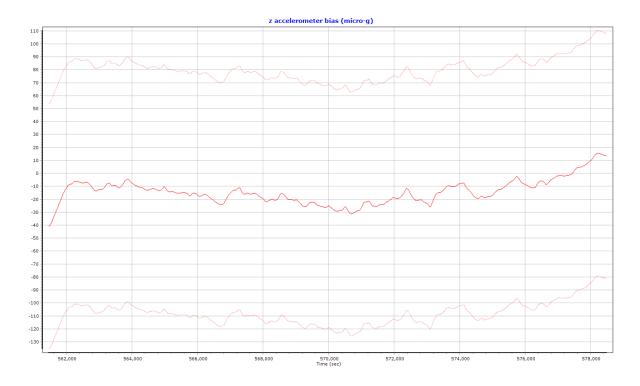


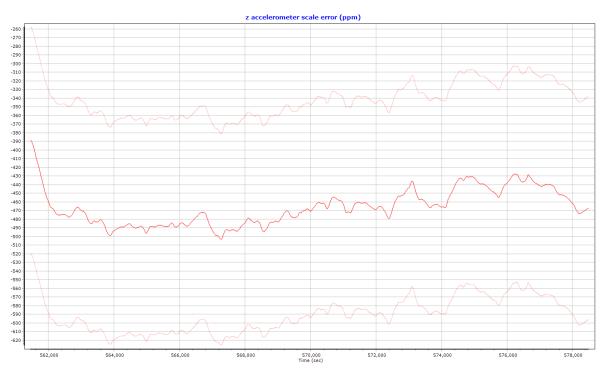


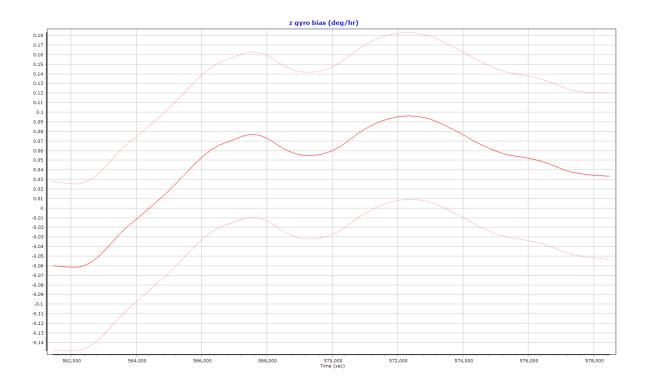


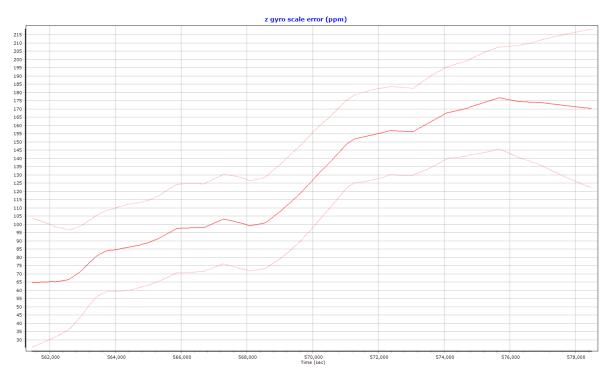


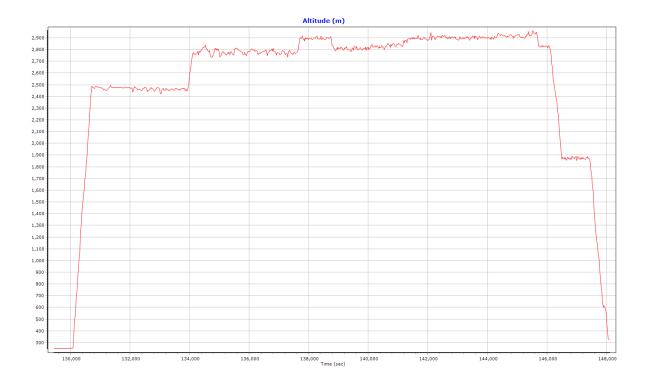


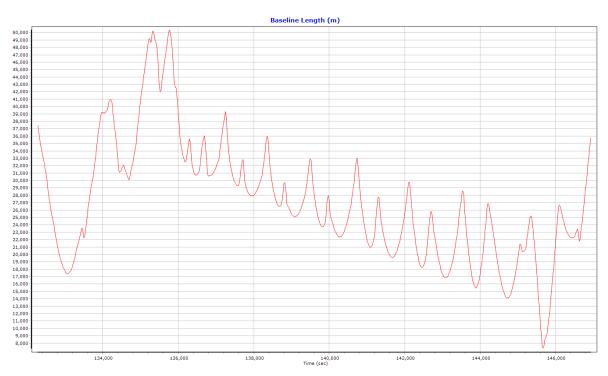


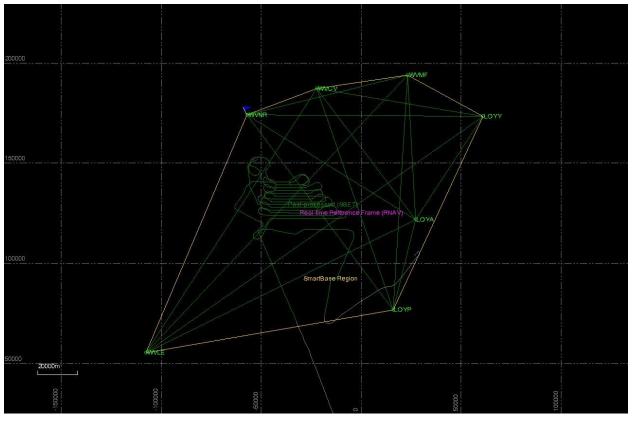






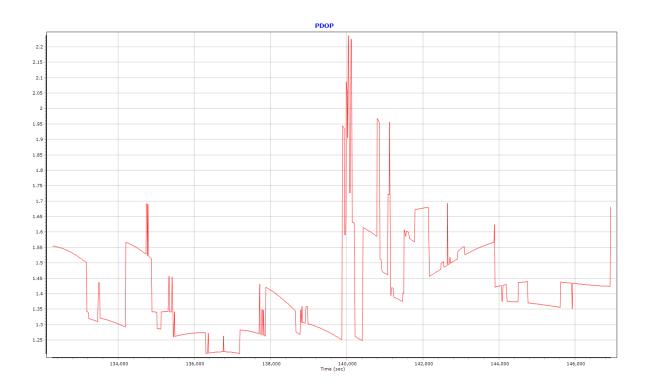


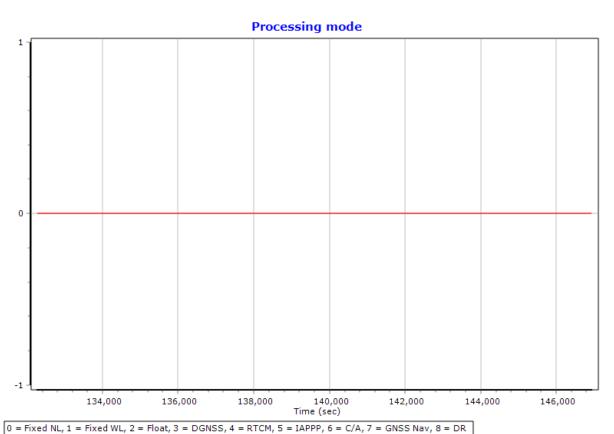


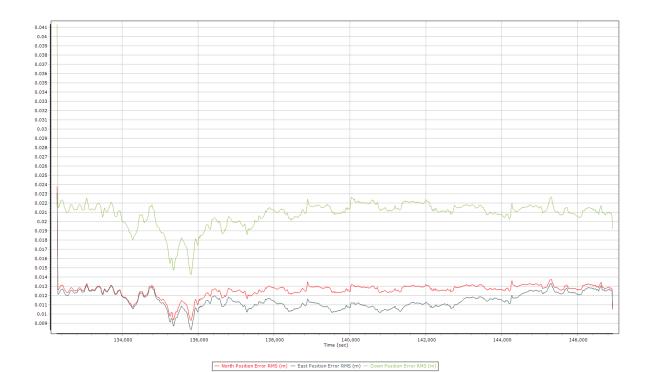


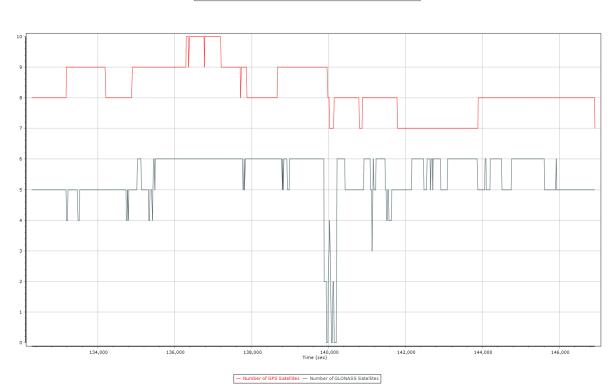


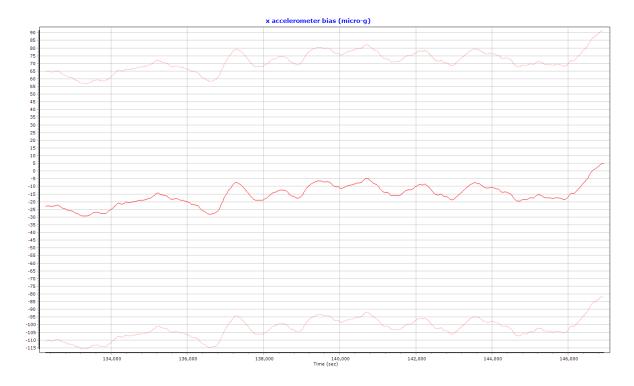
— North (m) — East (m) — Down (m) → DR mode

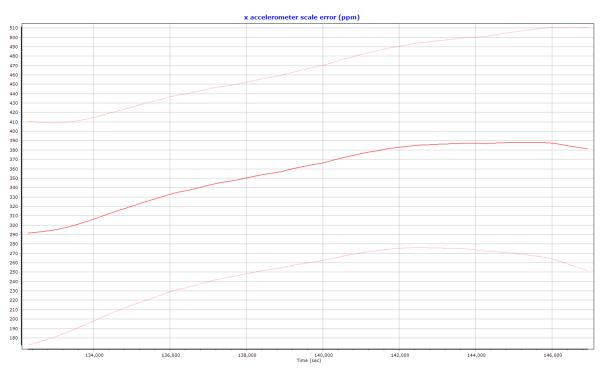


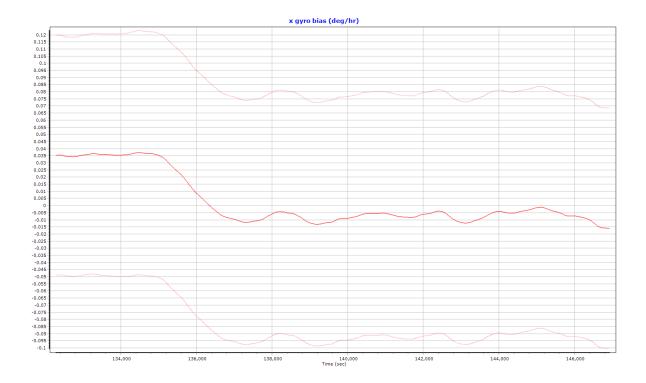


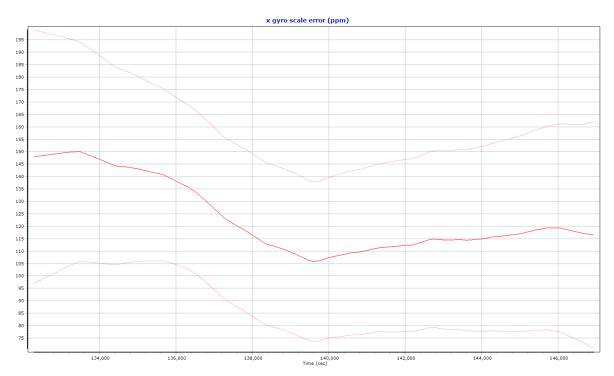


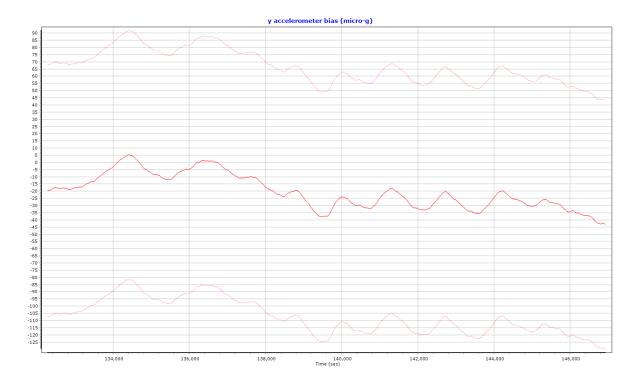


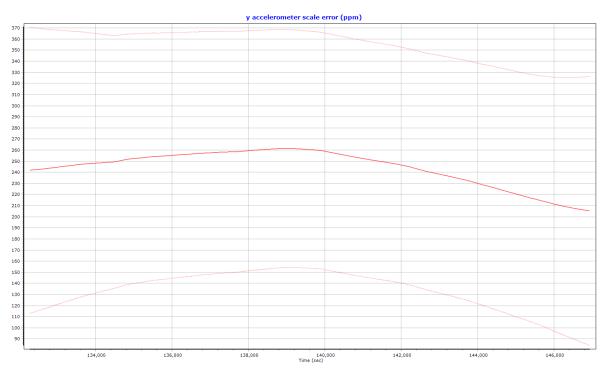


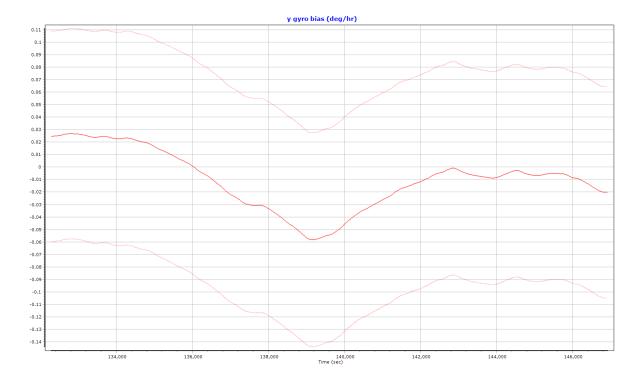


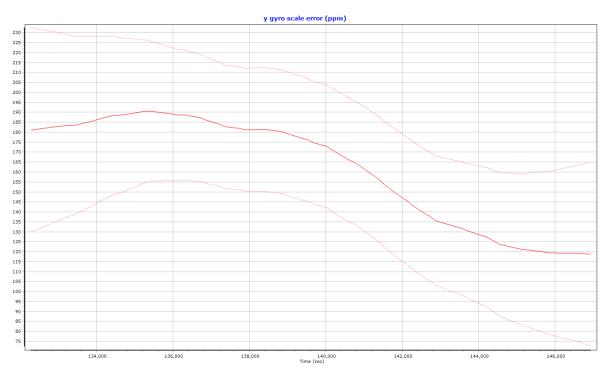


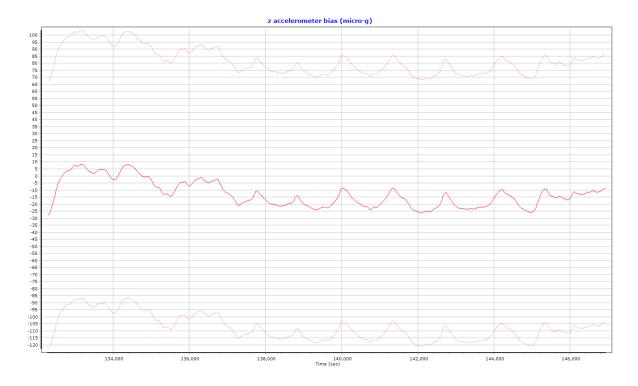


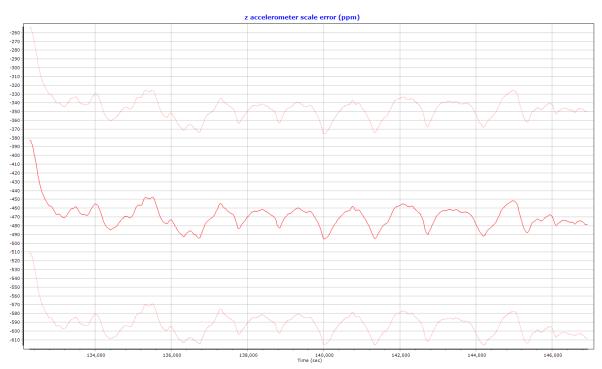


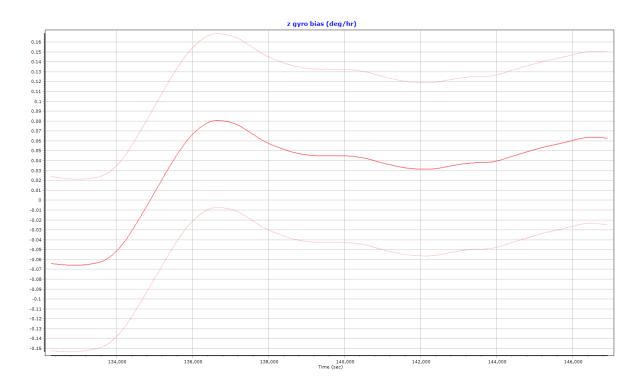


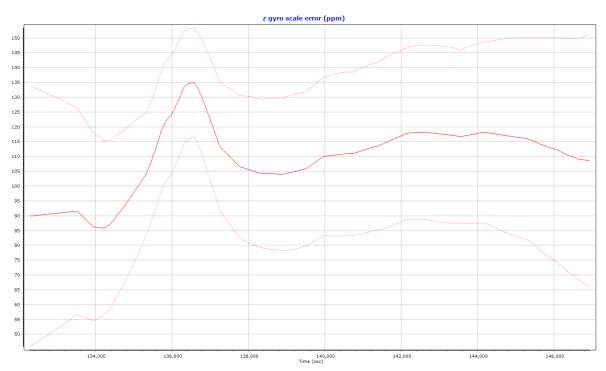


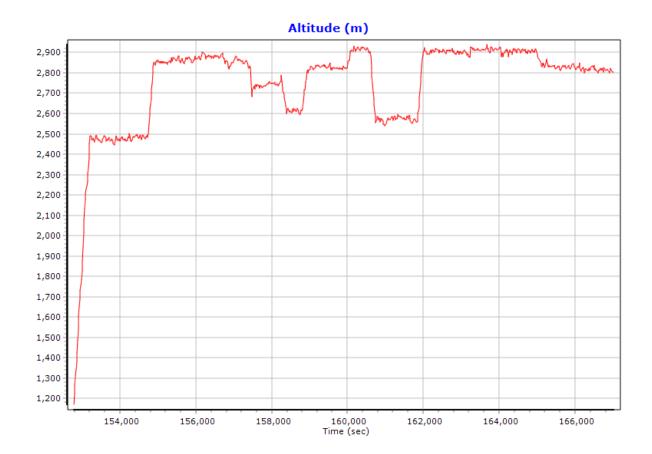


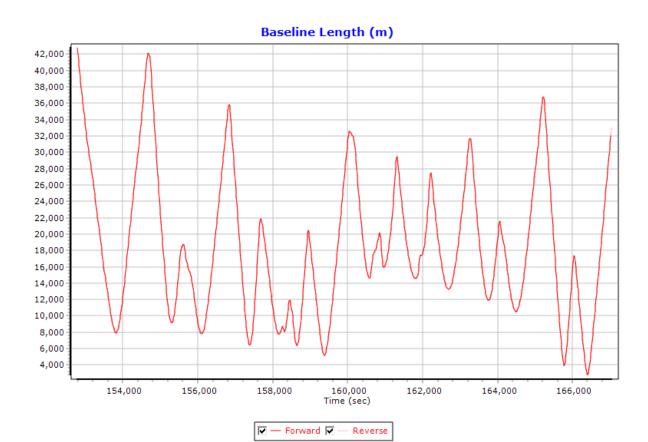


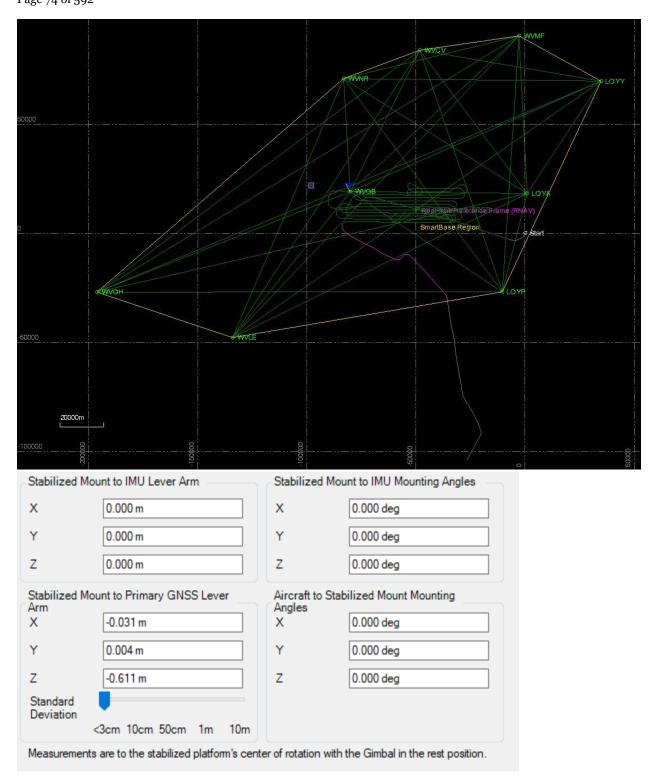


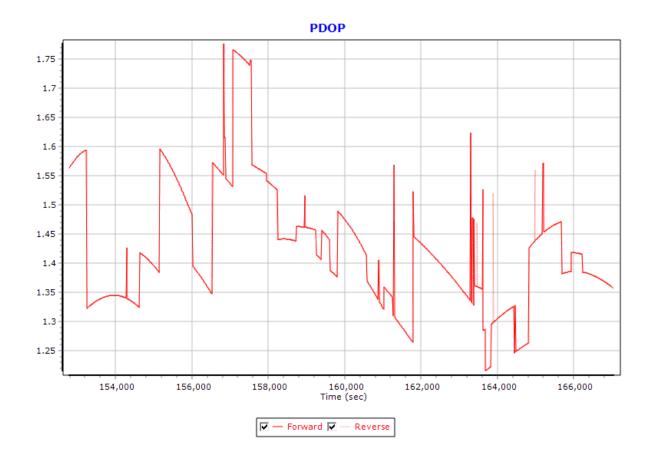


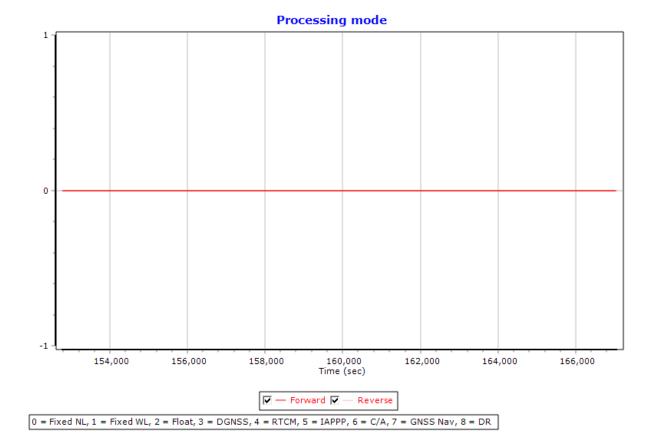


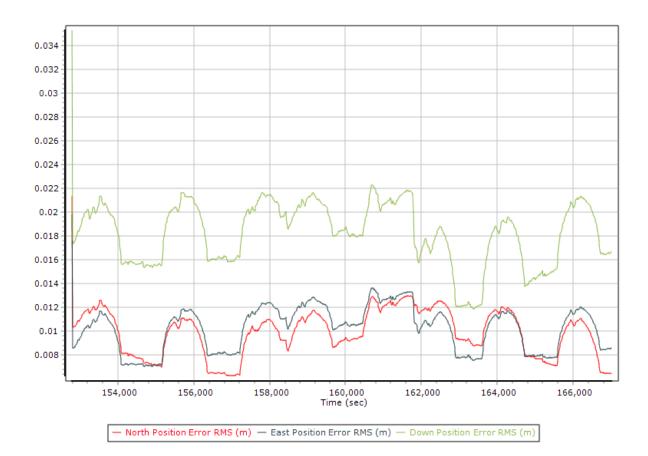


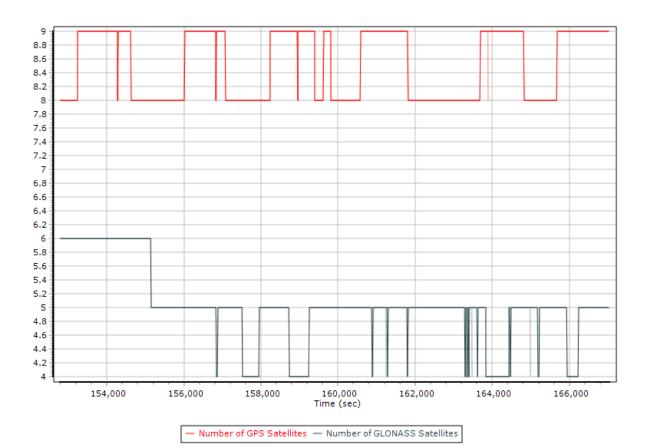


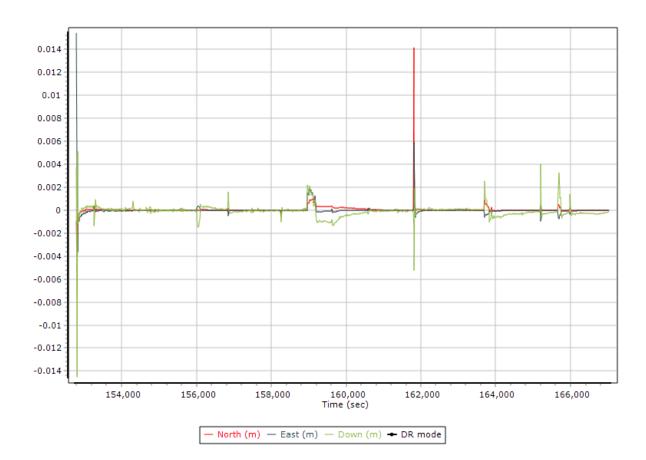


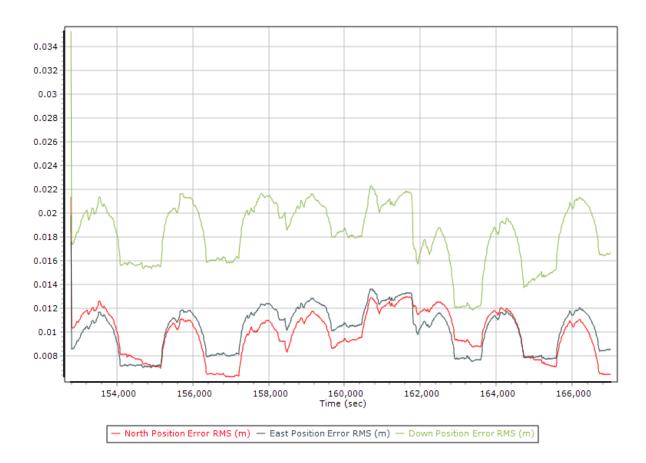


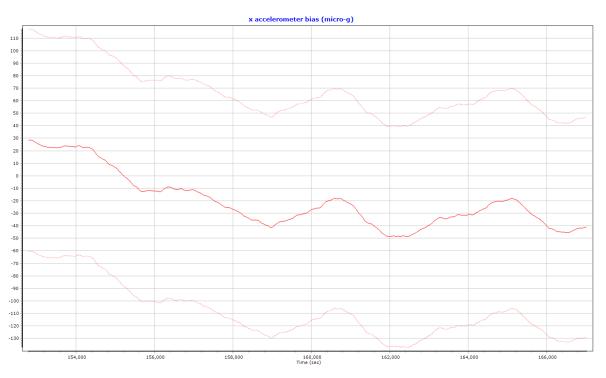


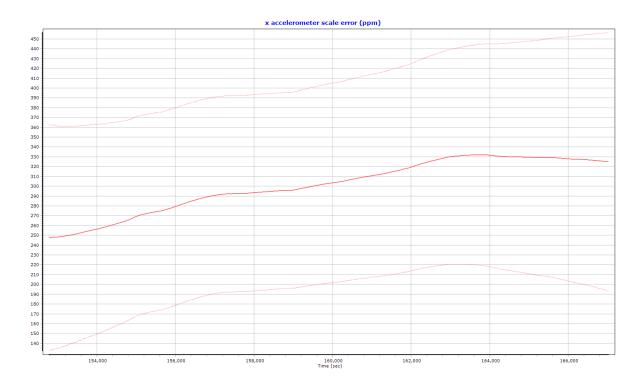




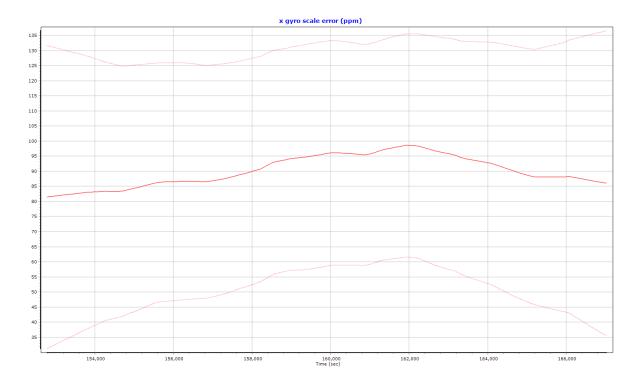




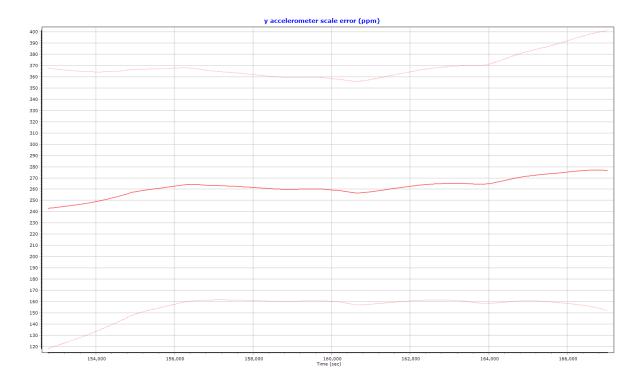


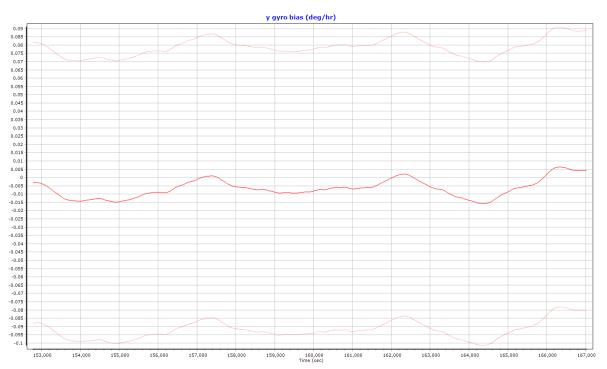


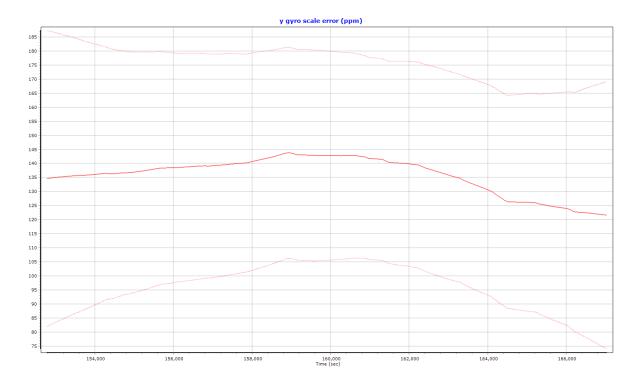


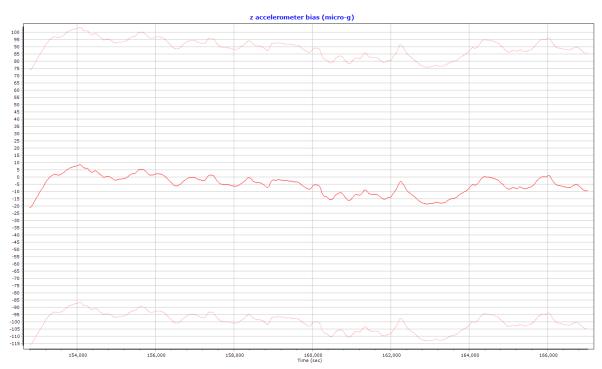


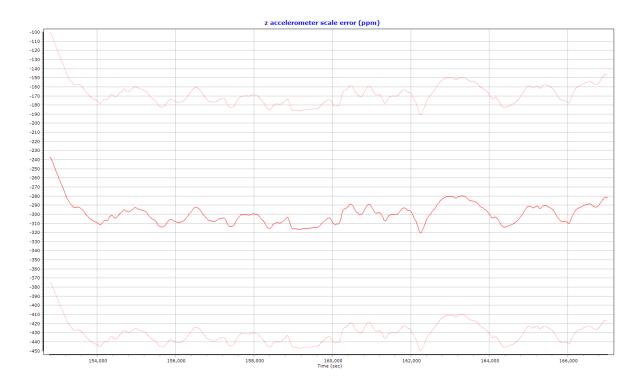


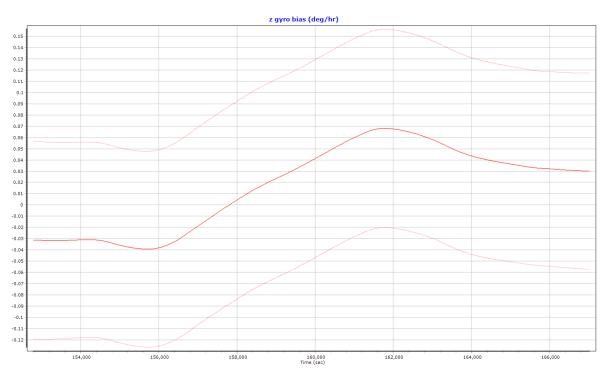


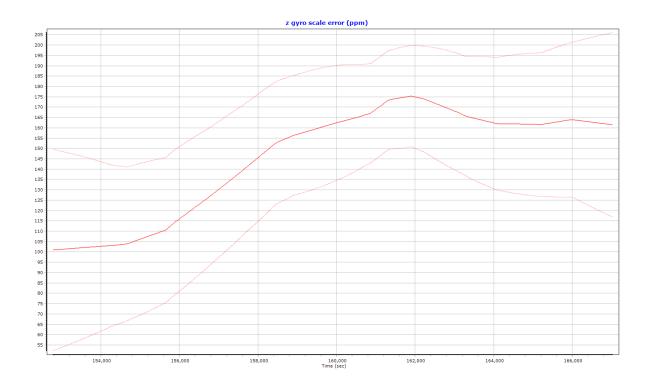




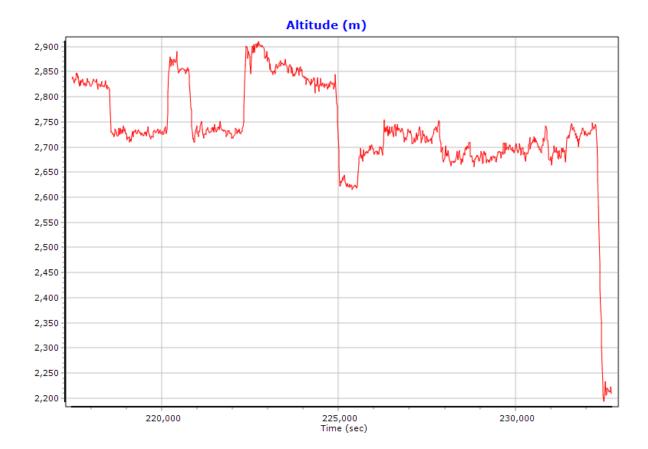




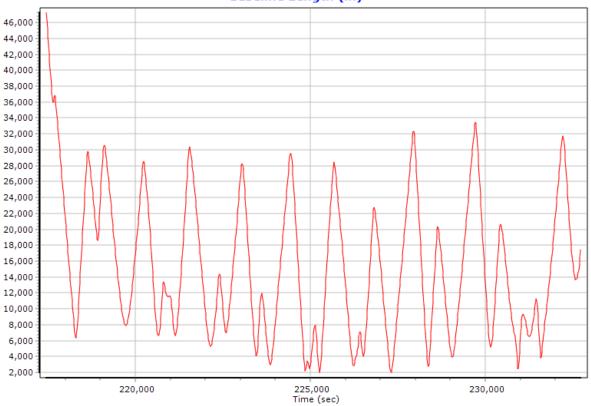


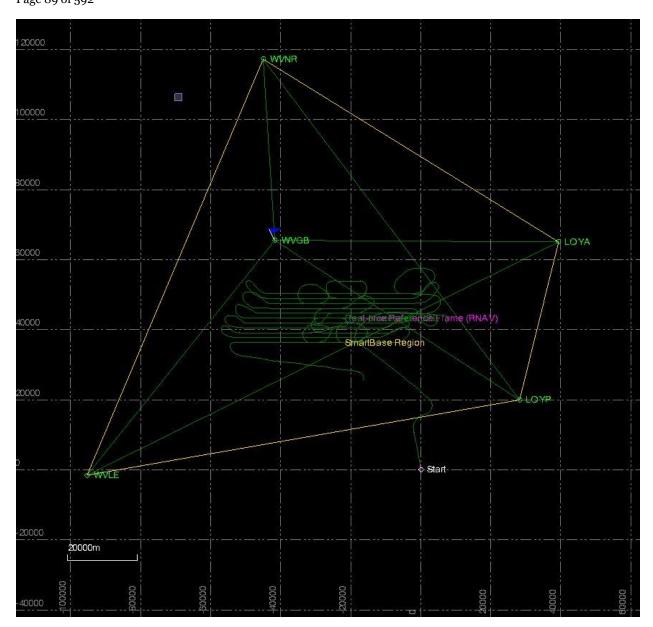


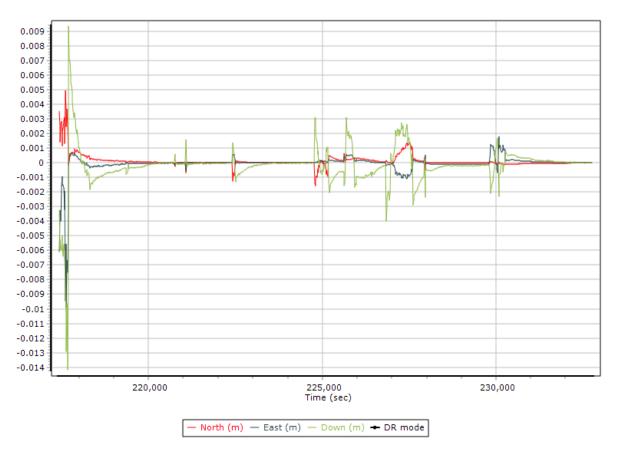
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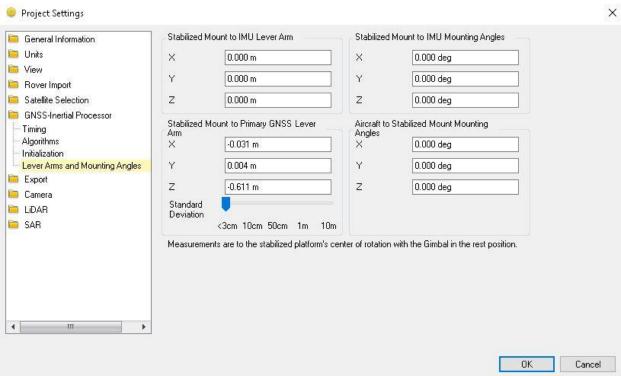


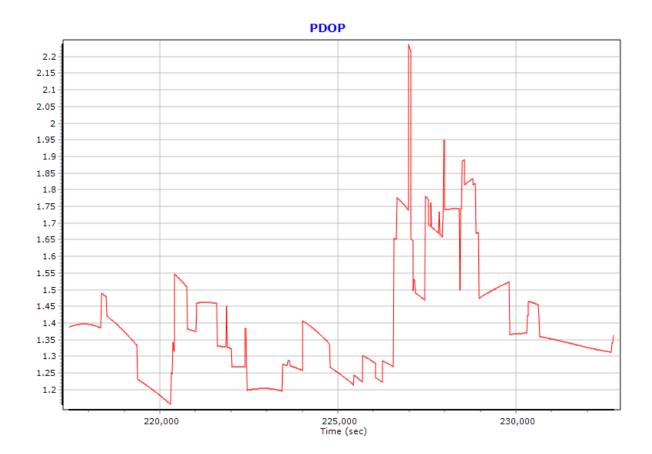


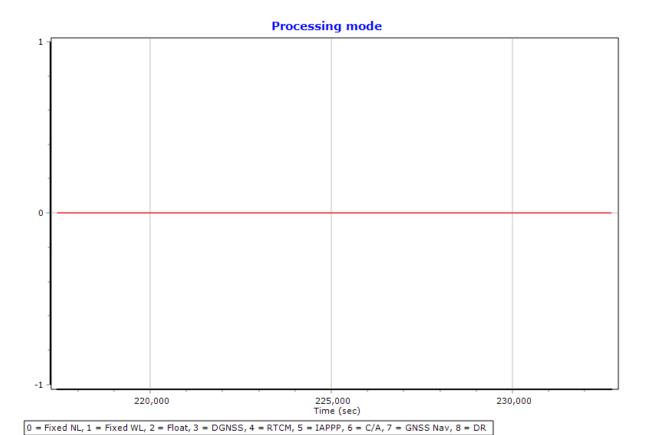


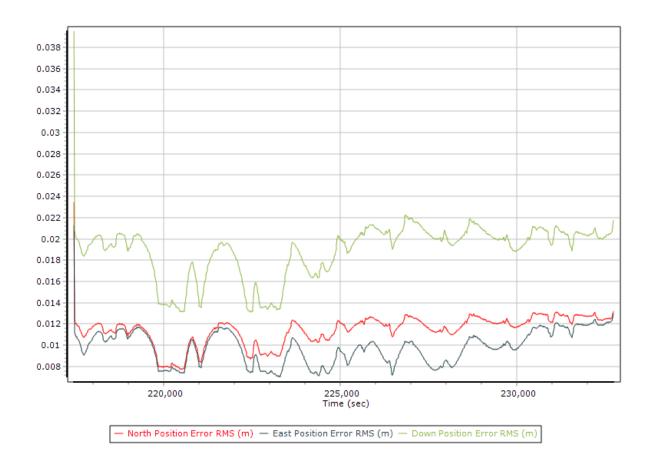


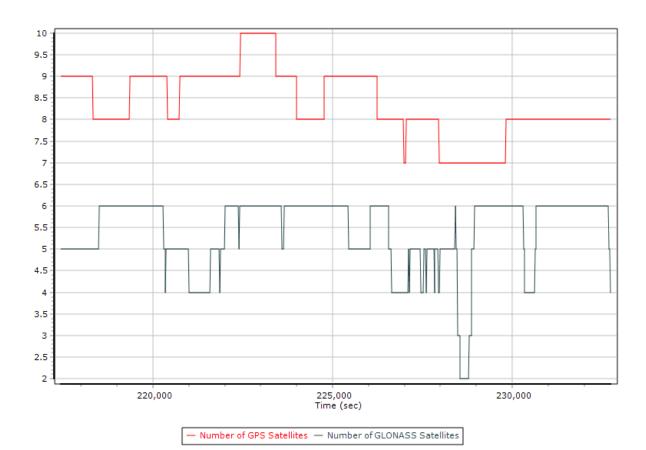




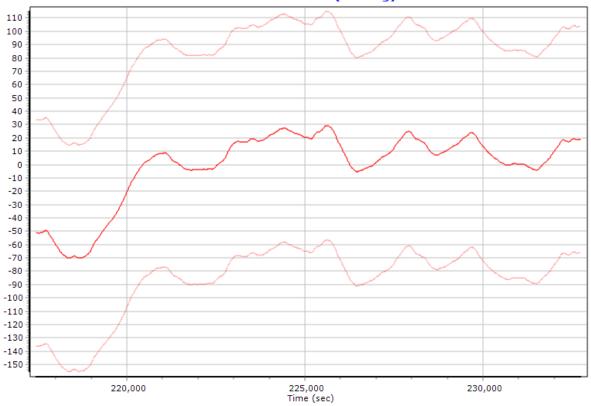




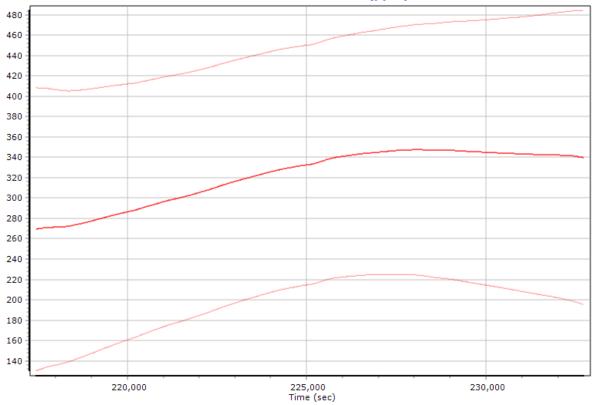




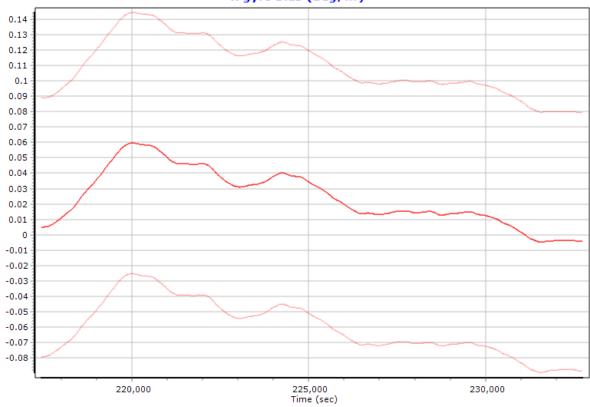




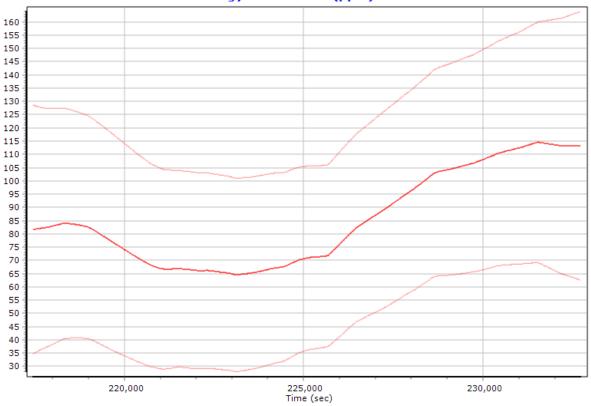
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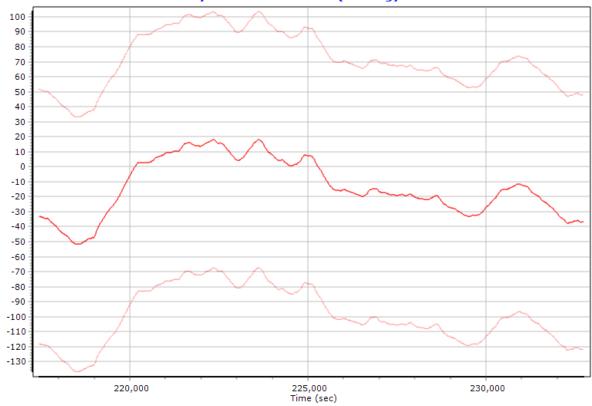




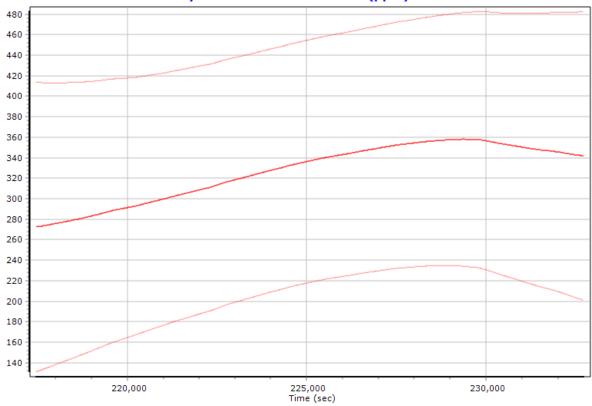
x gyro scale error (ppm)



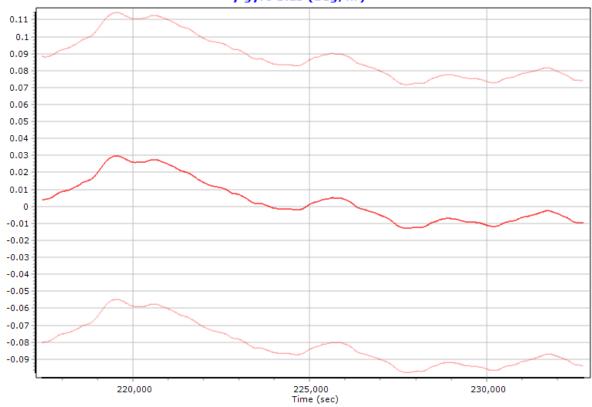




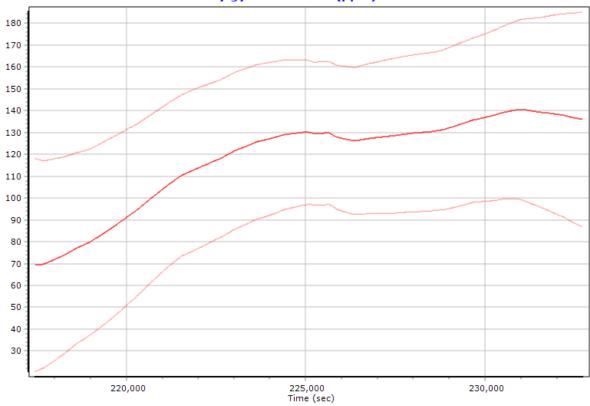




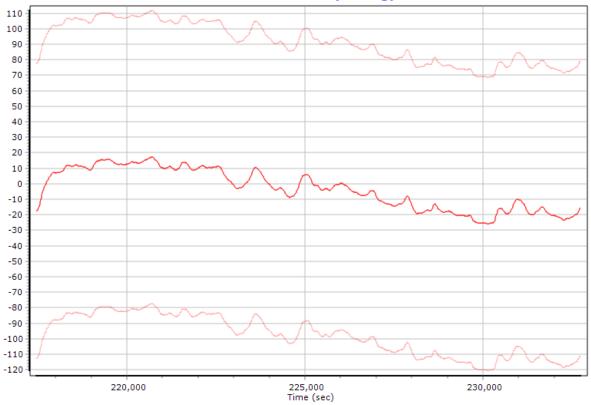




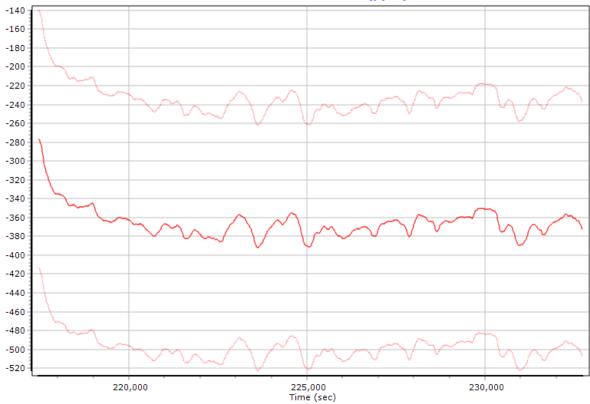




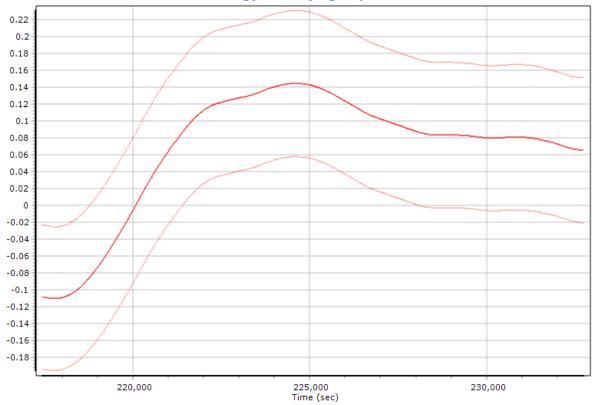


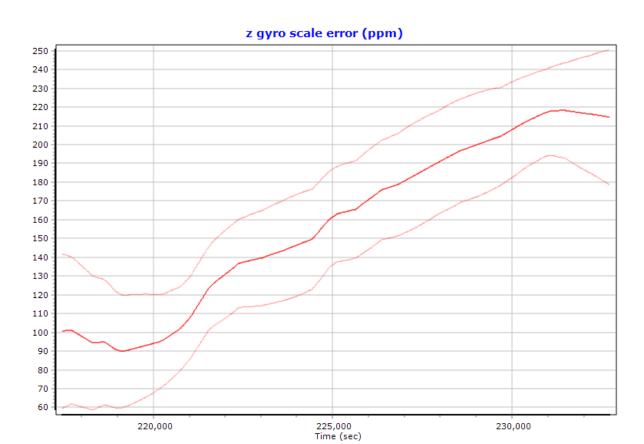




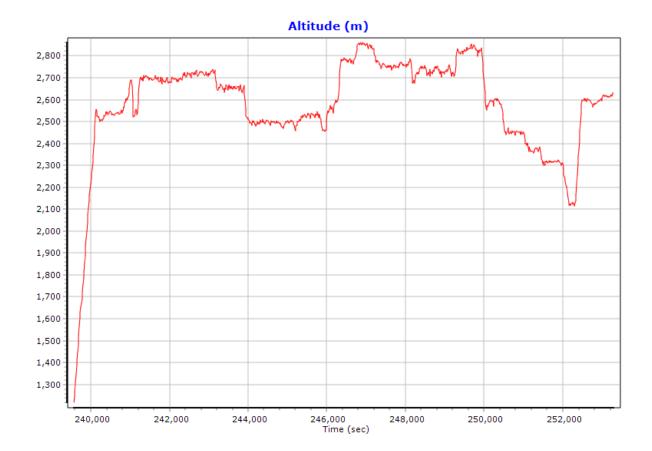








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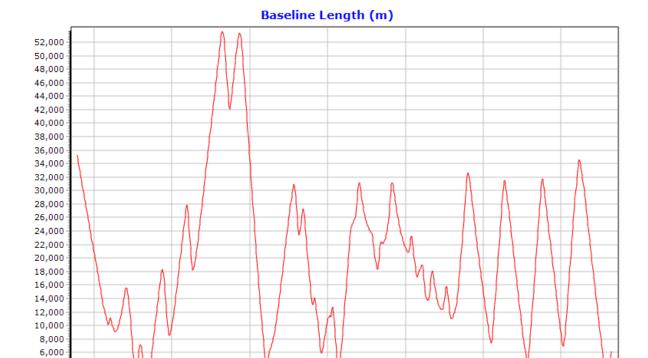


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240,000

242,000

244,000



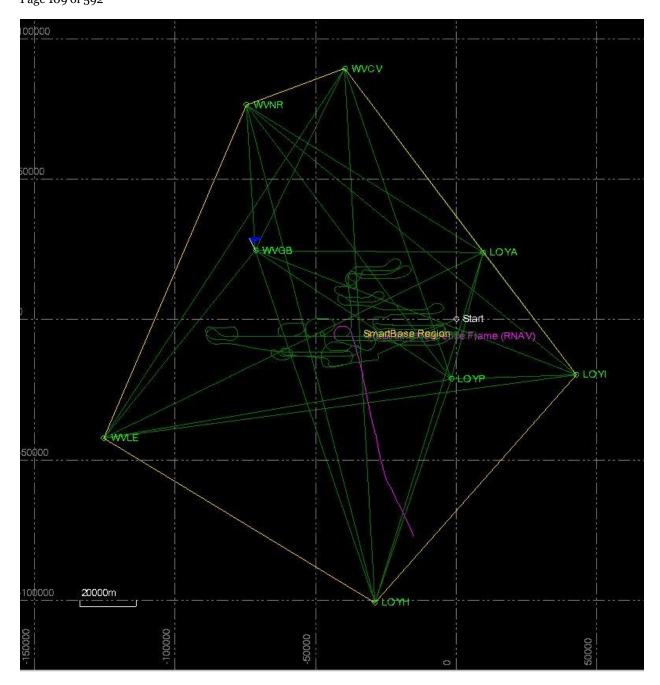
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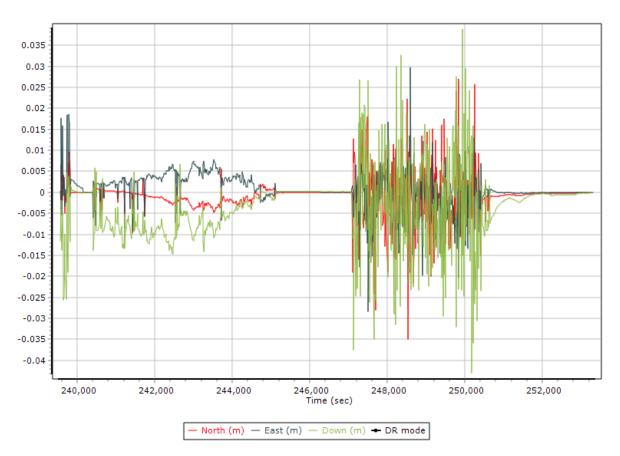
Time (sec)

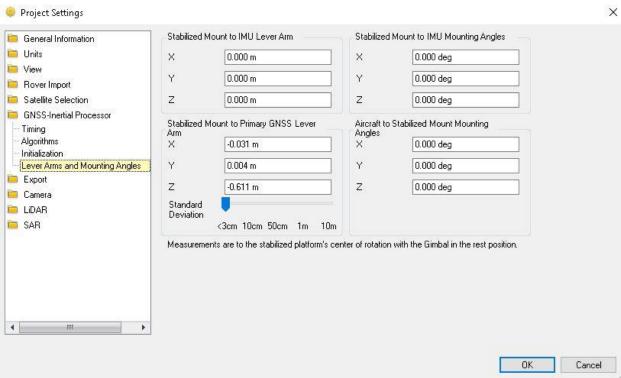
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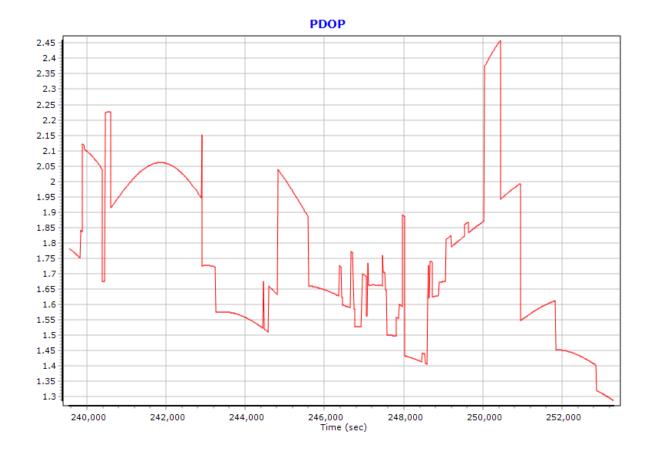
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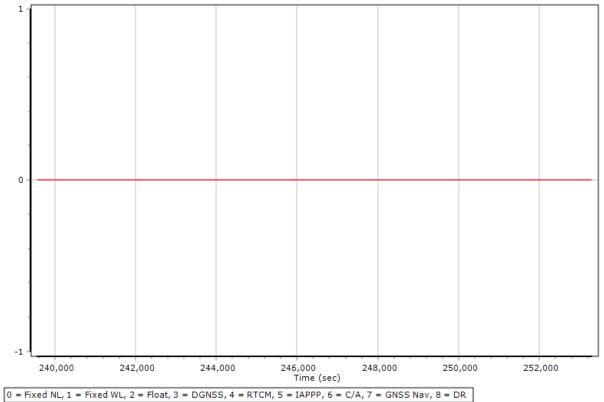


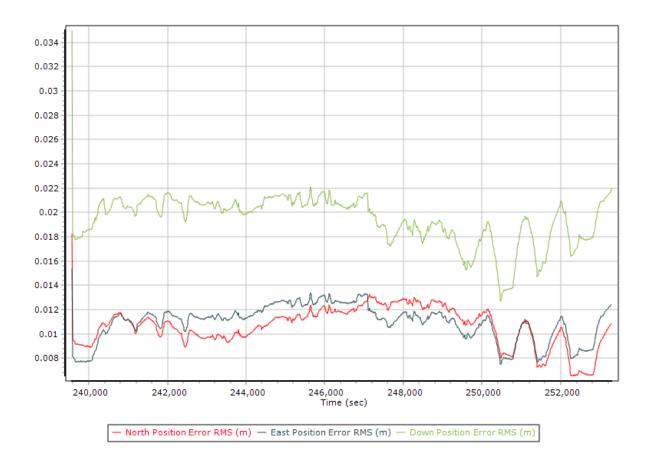


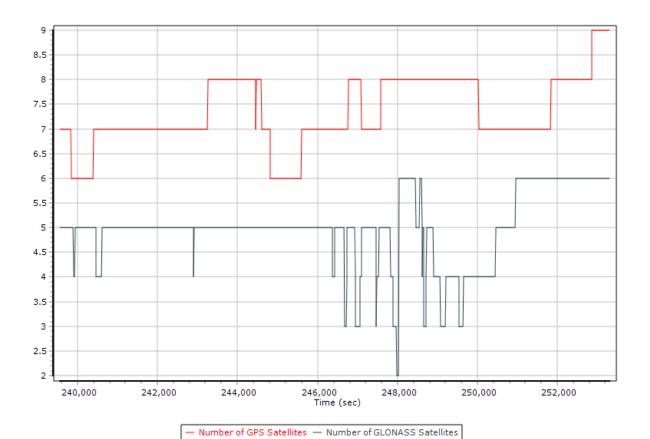




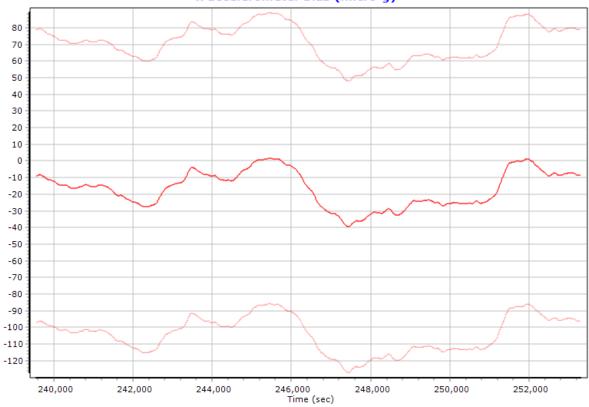




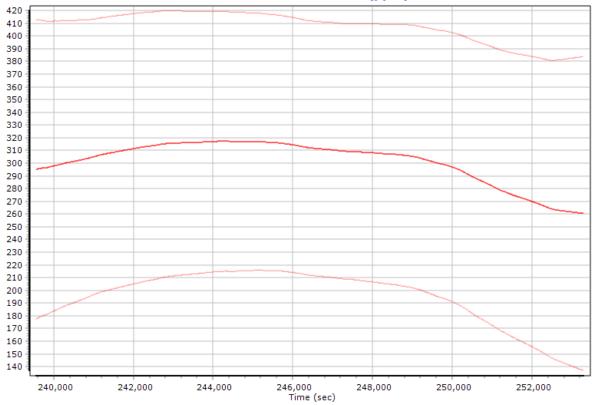




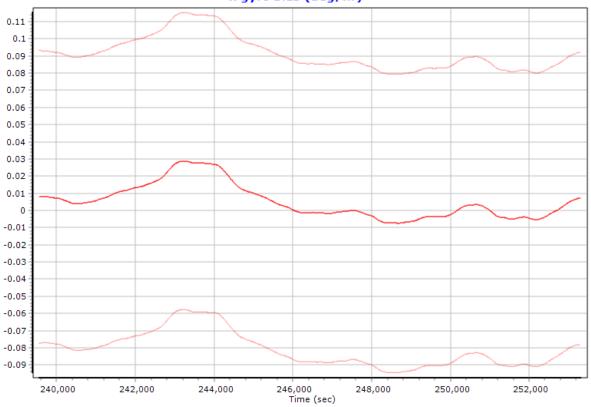




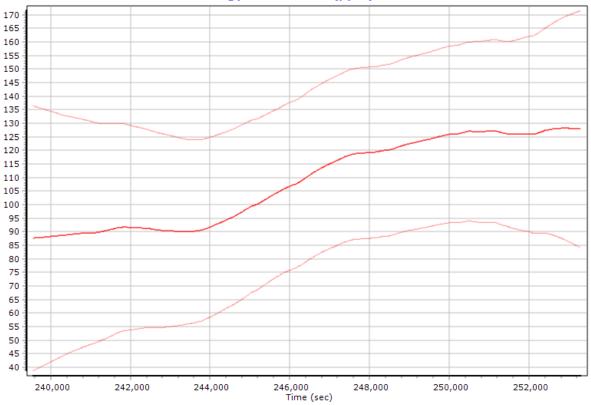




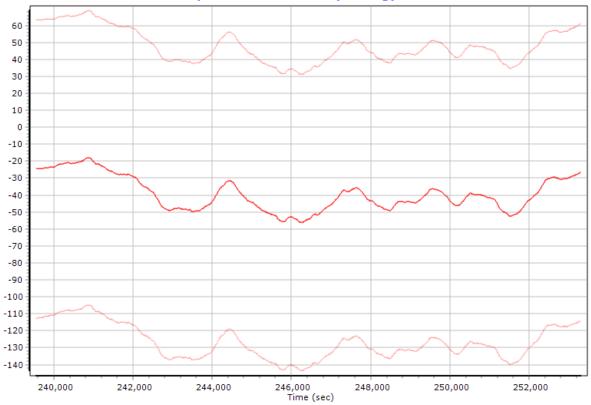




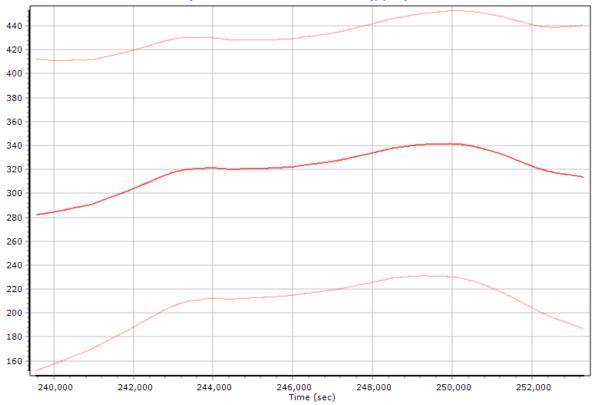




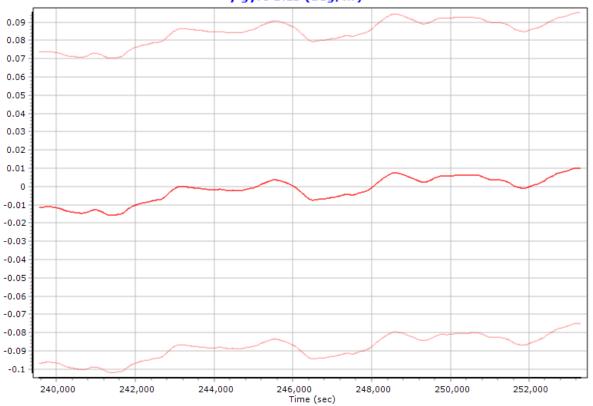


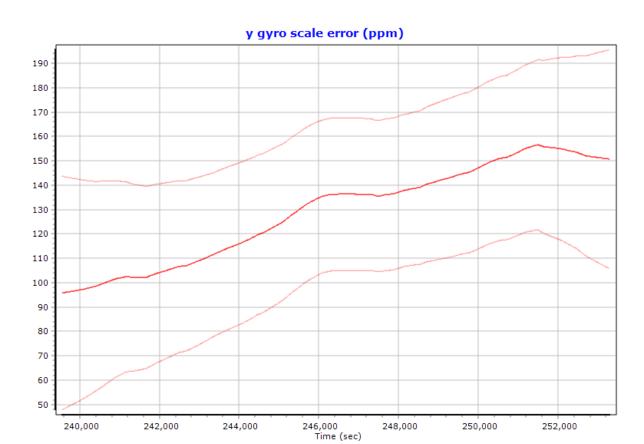




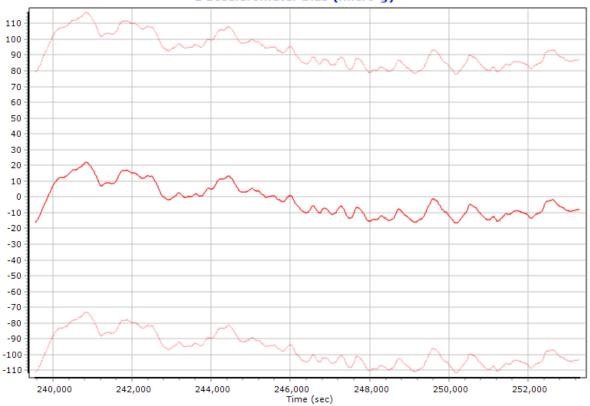




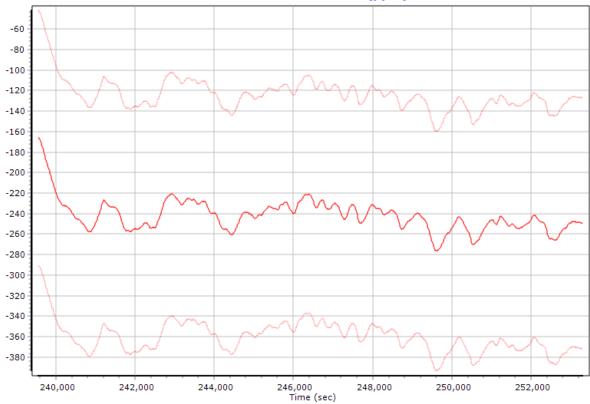




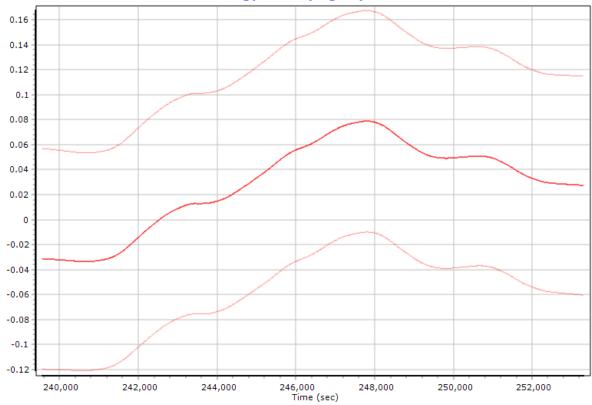


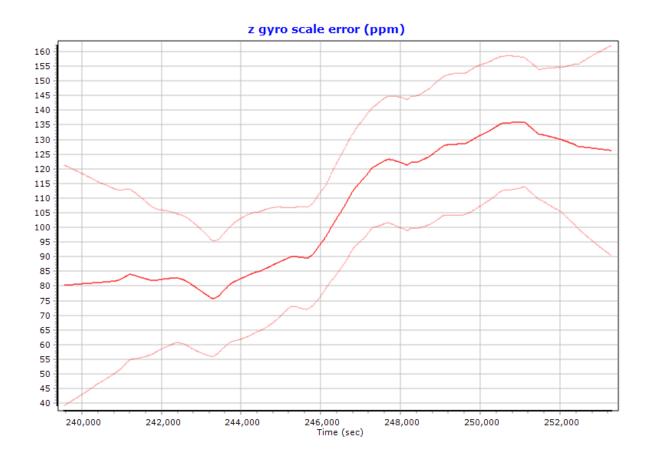




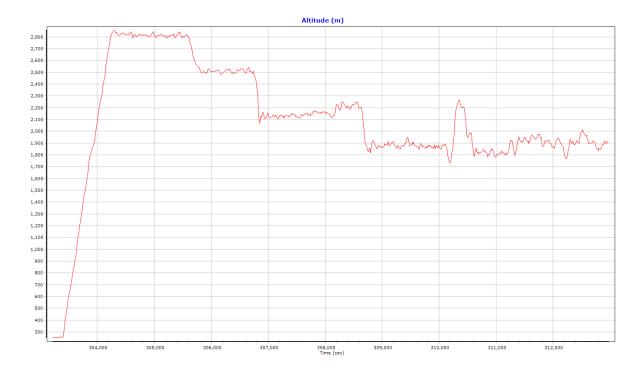


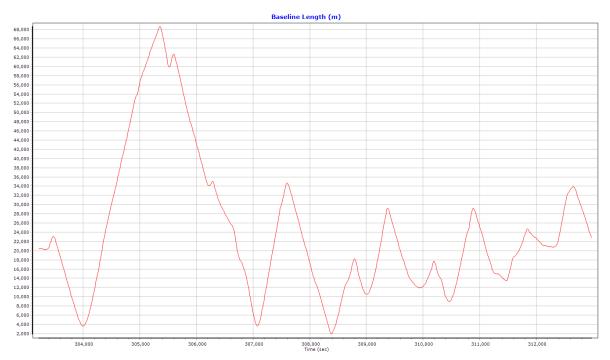


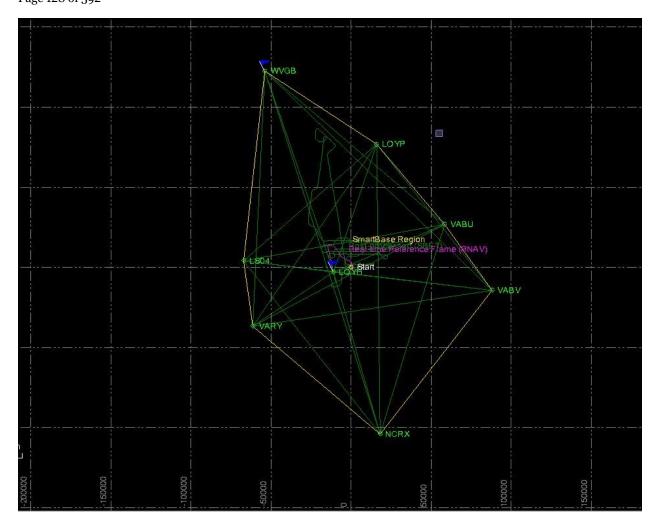




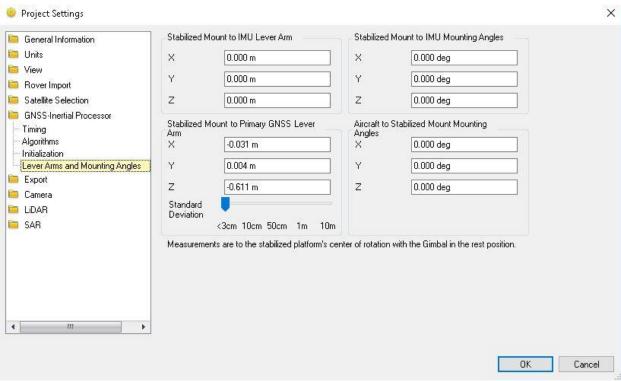
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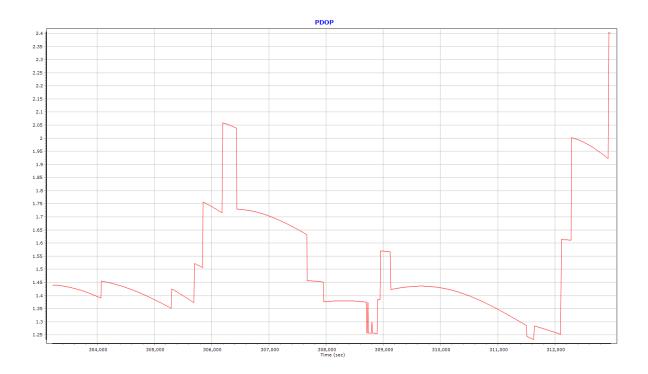


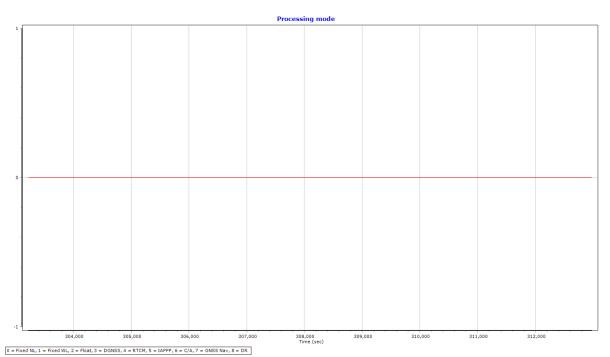


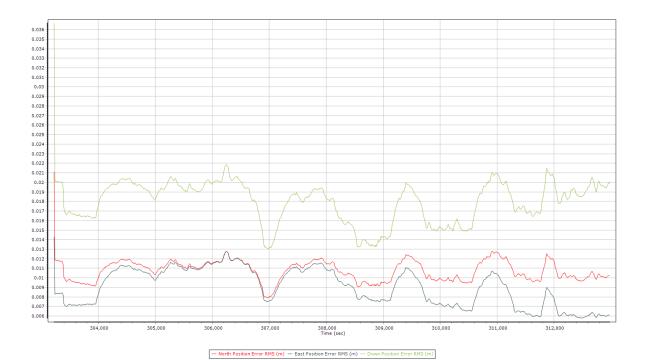


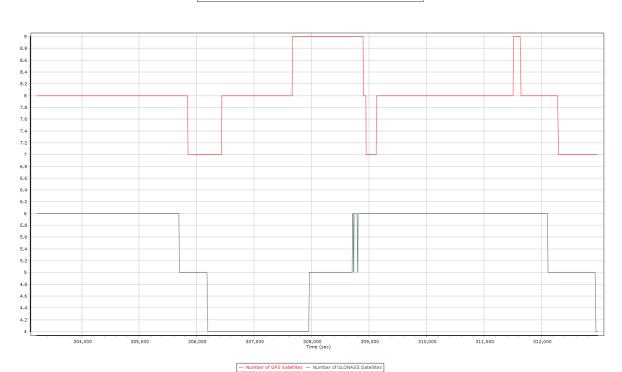


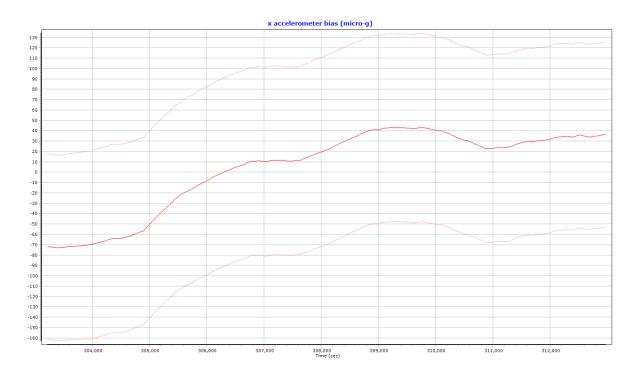


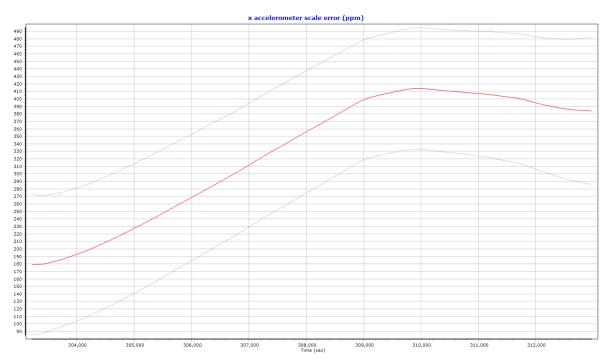


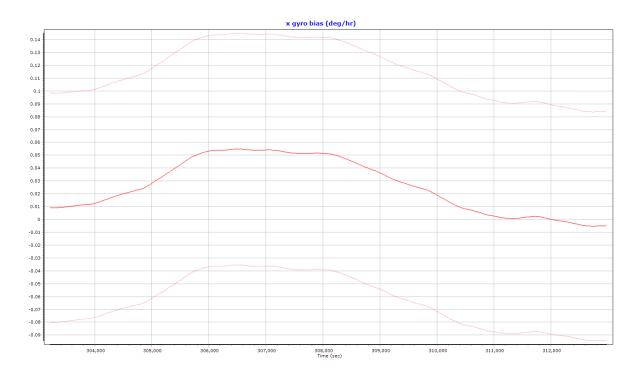


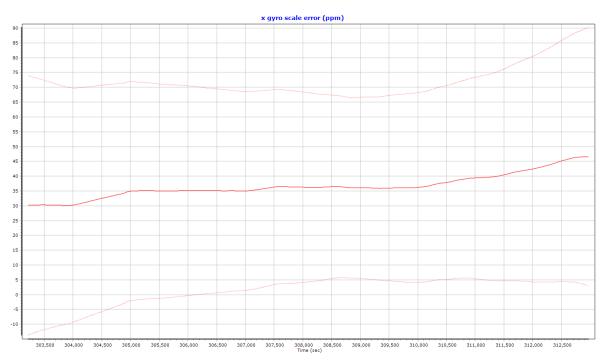


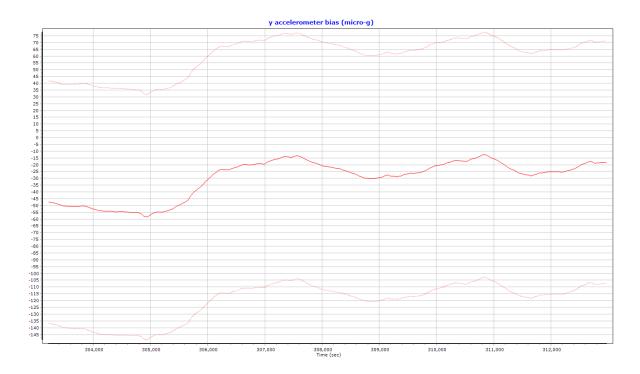


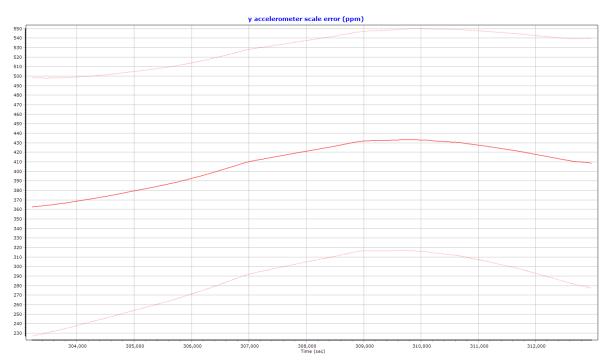


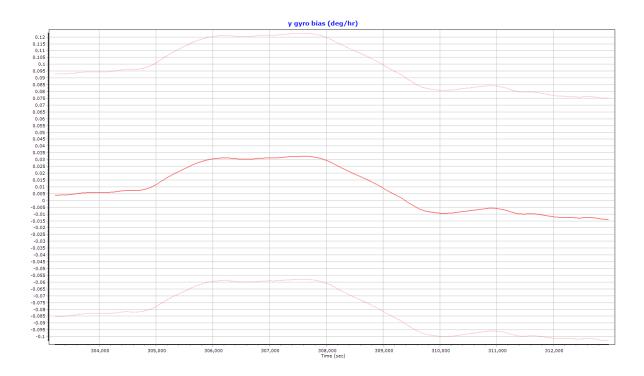


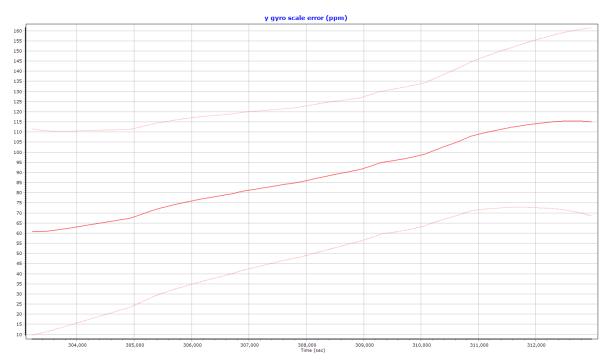


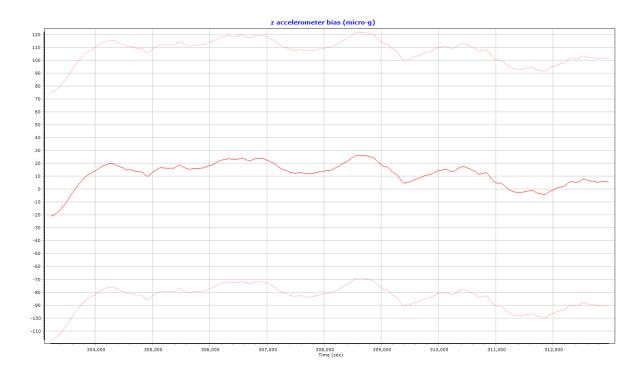


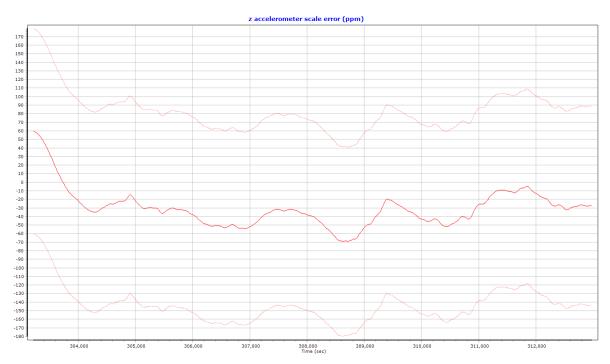


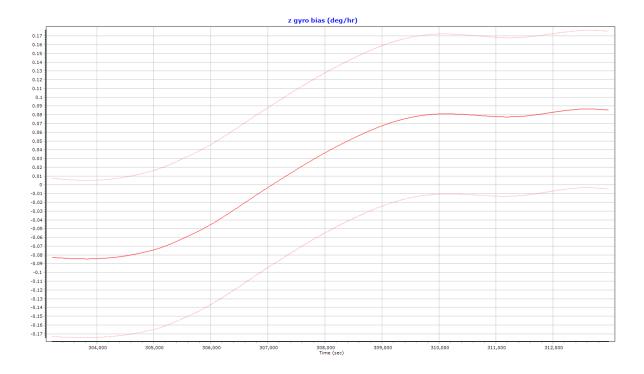


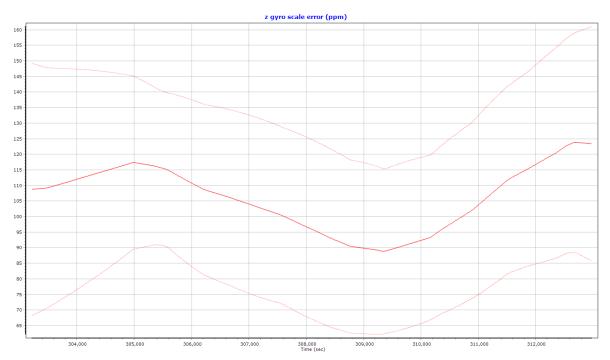




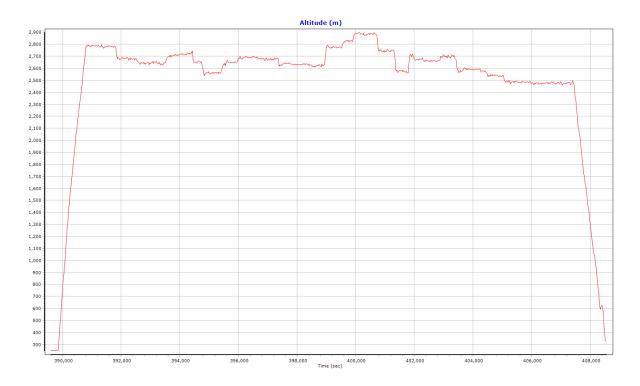


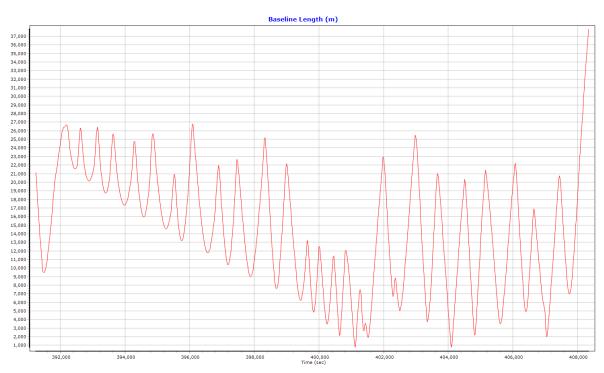


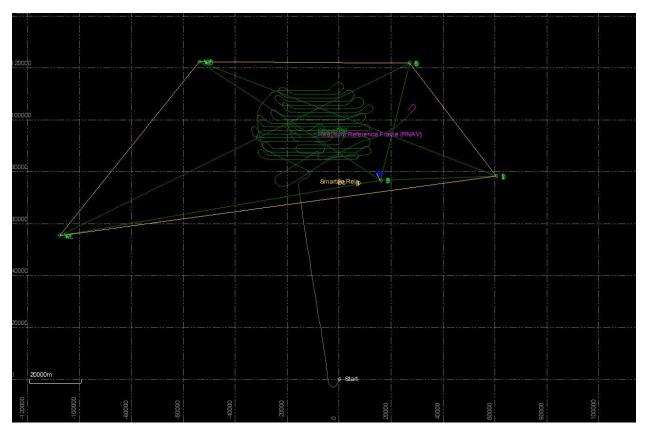


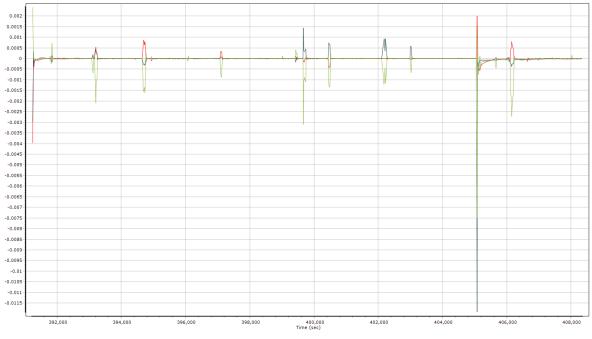


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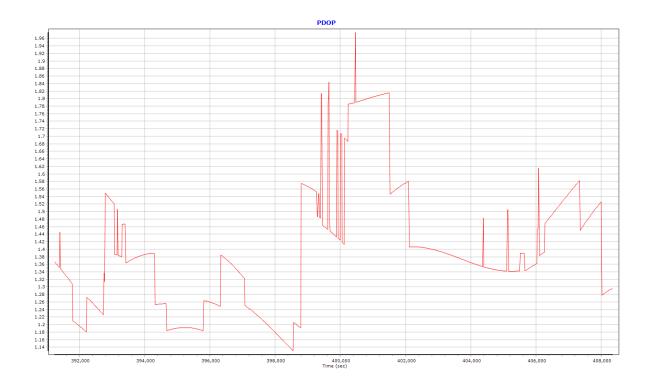




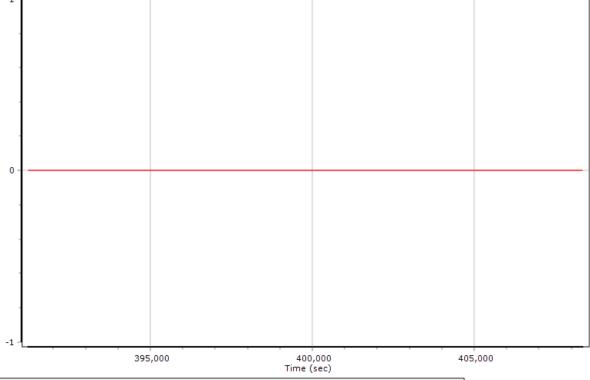




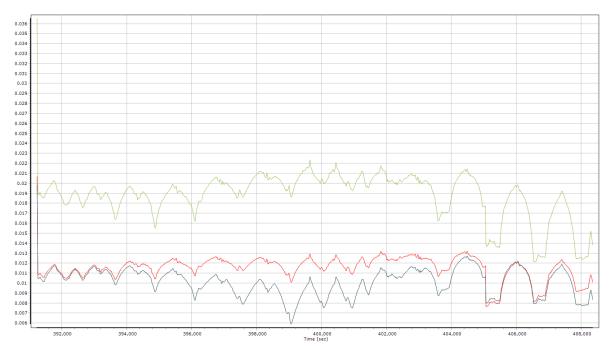
— North (m) — East (m) — Down (m) → DR mode

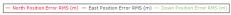


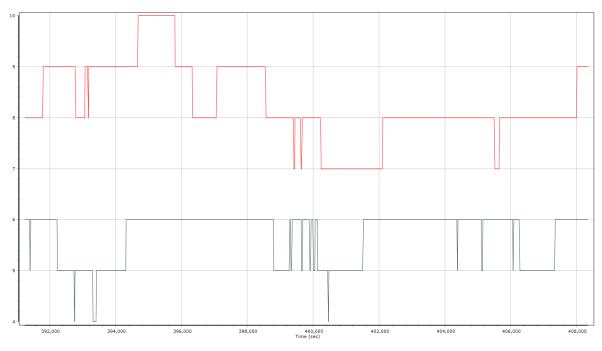




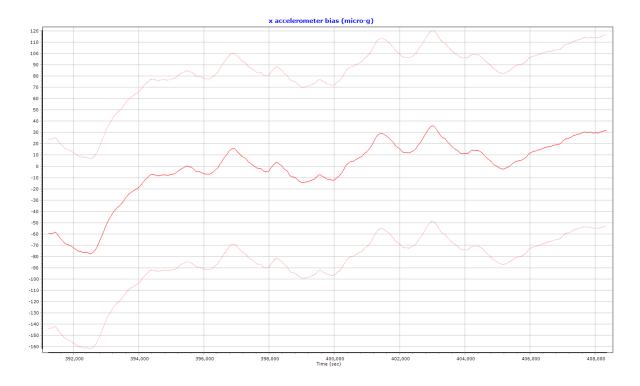
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

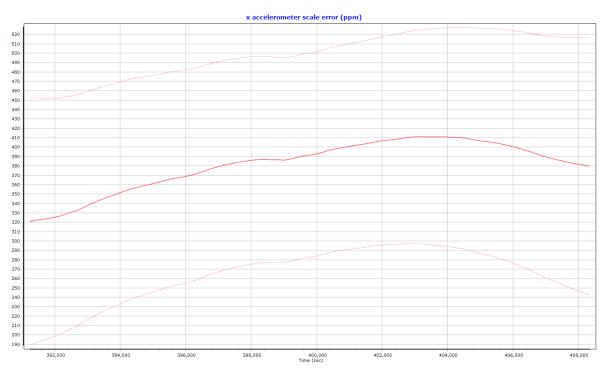


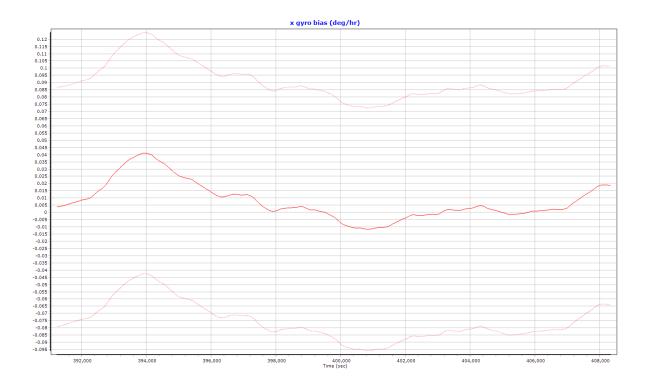


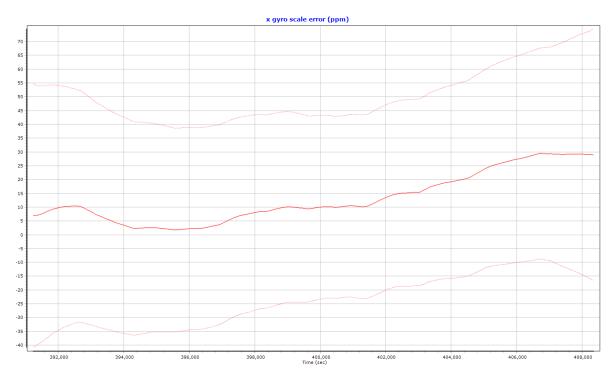


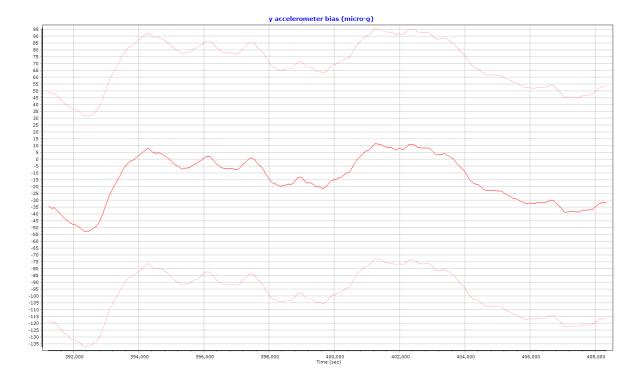
Number of GPS Satellites — Number of GLONASS Satellites

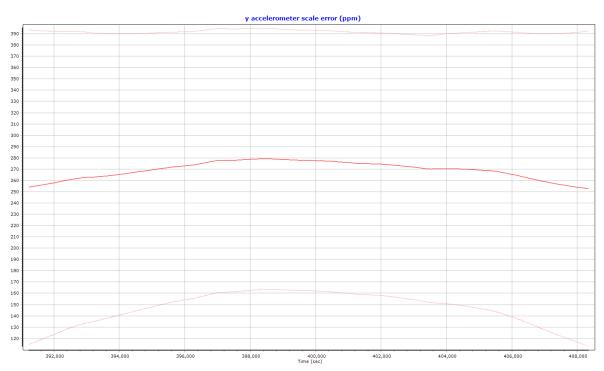


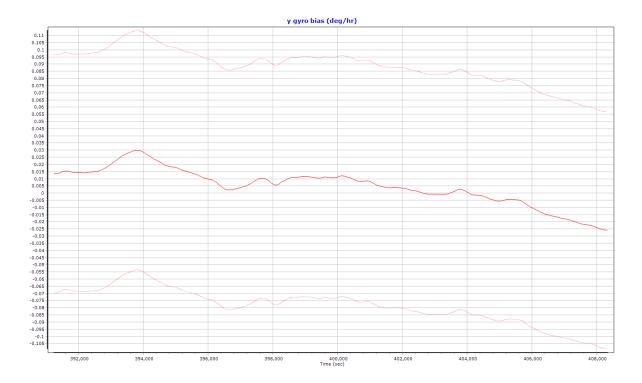


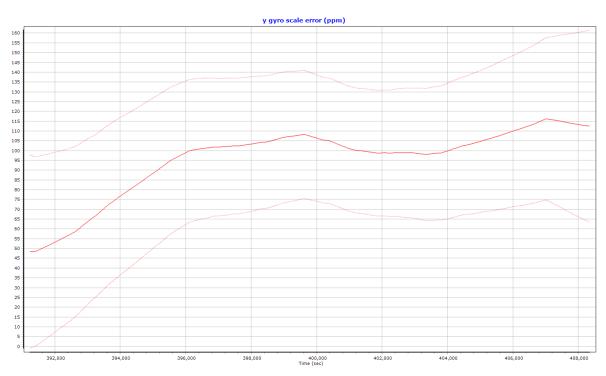


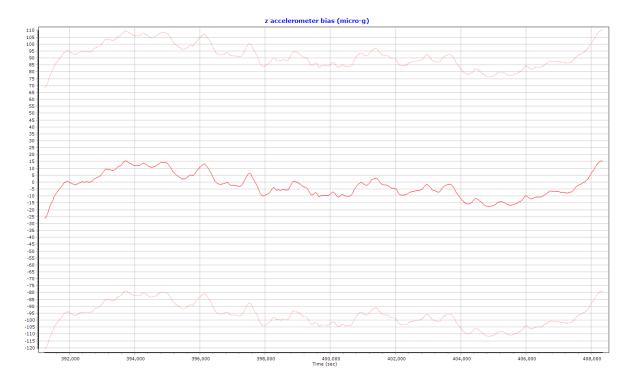


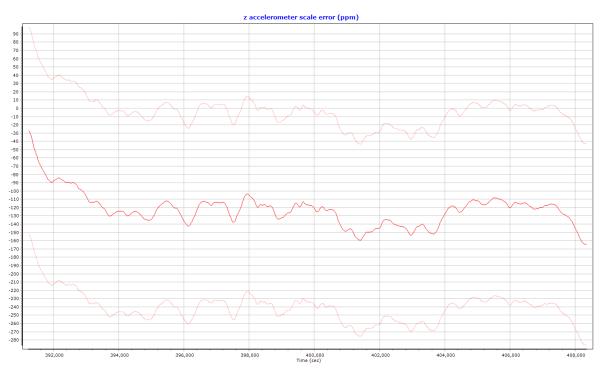


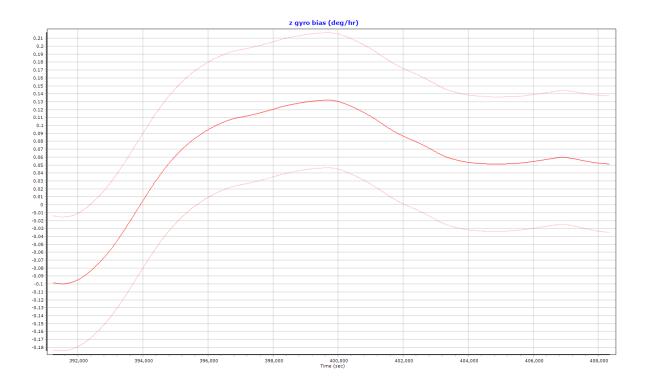


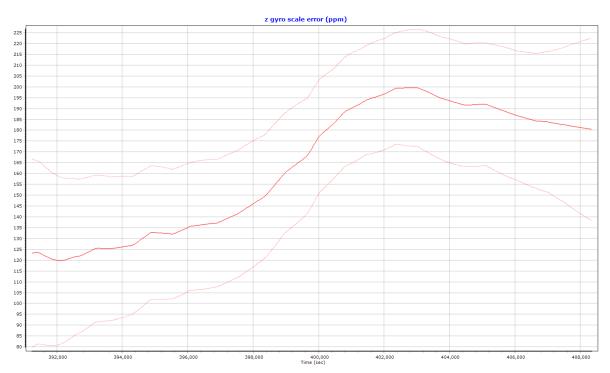


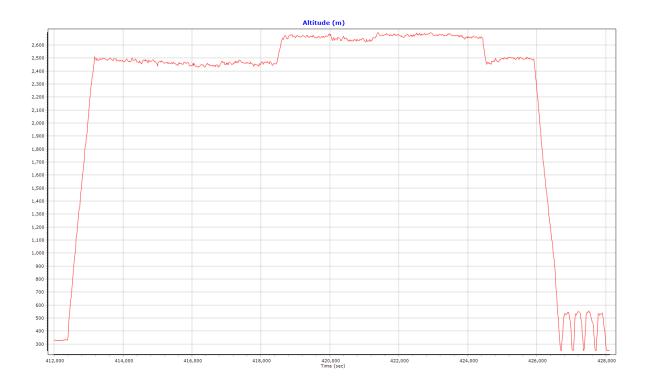


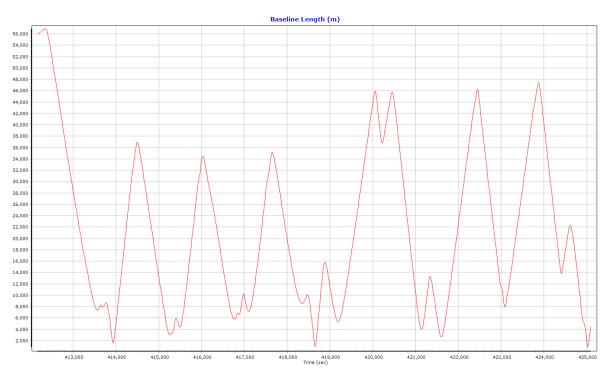


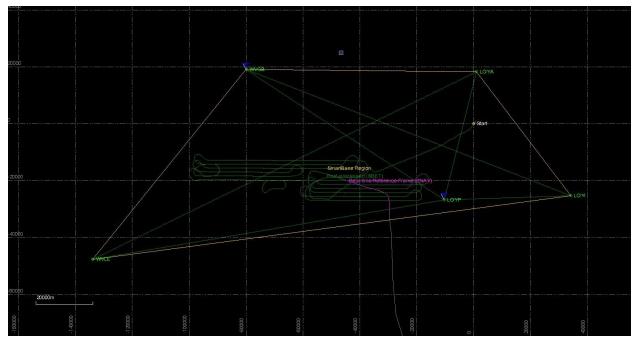






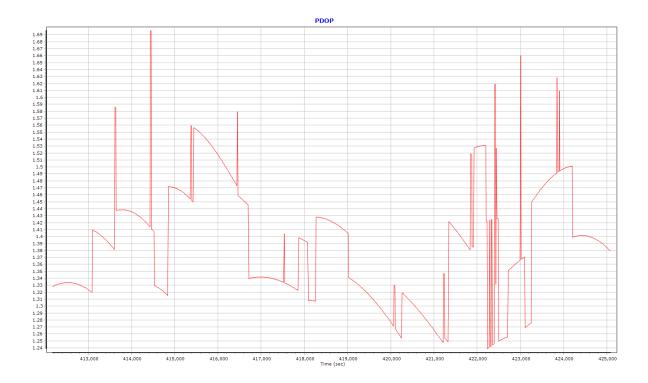


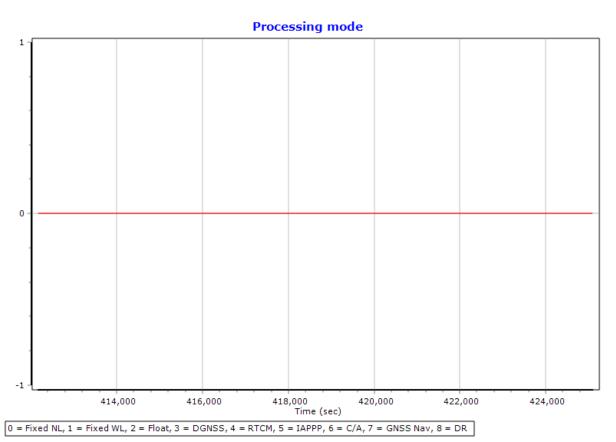


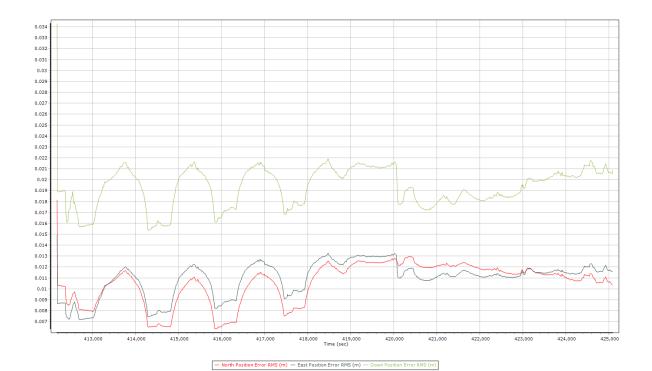


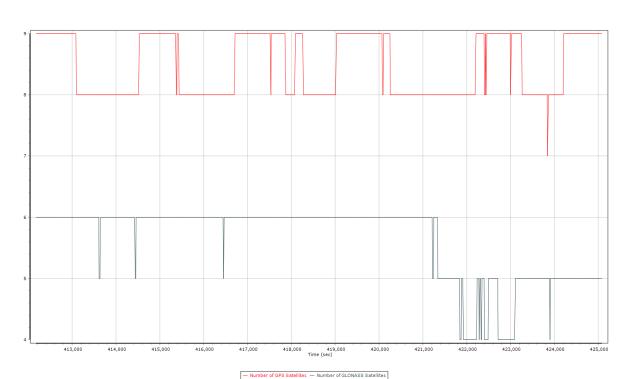


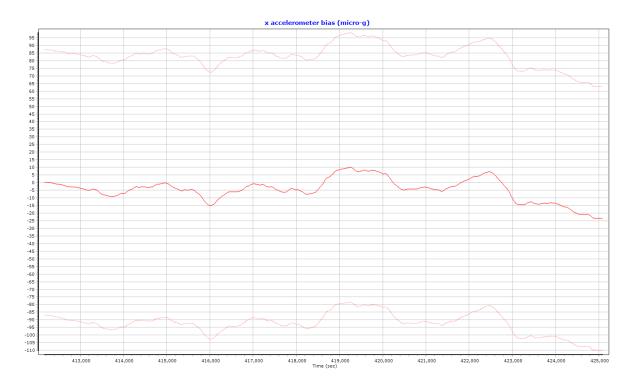
— North (m) — East (m) — Down (m) ← DR mode

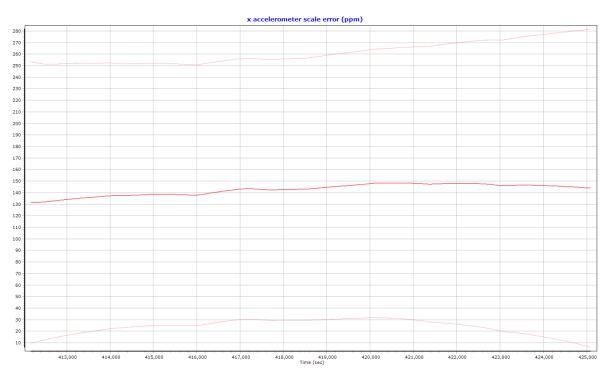


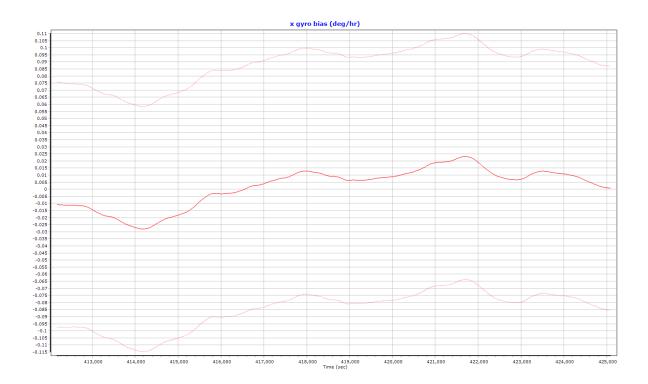


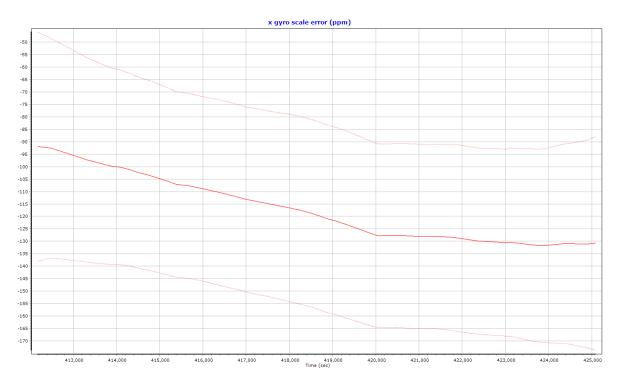


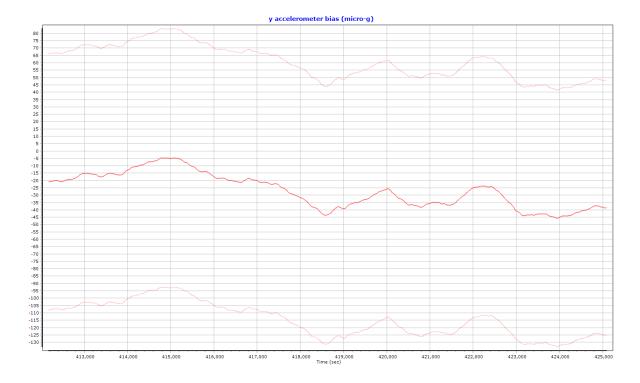


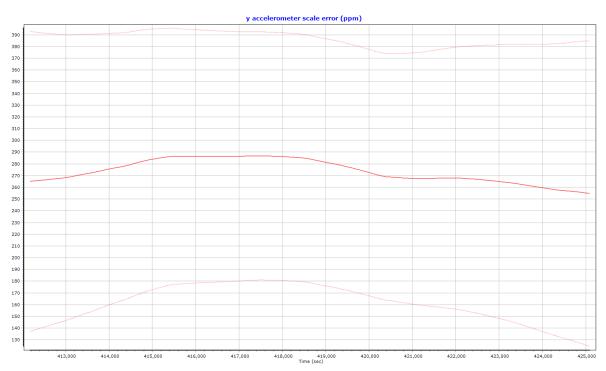


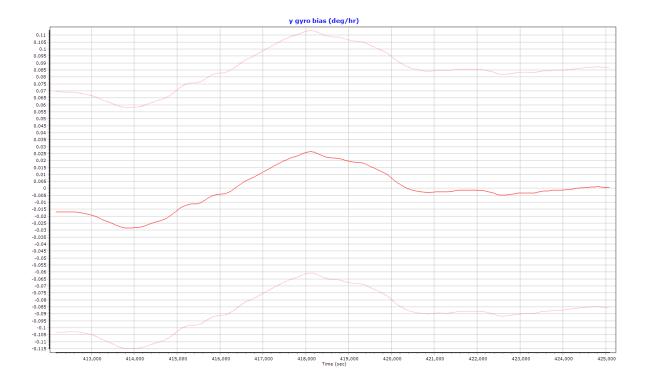


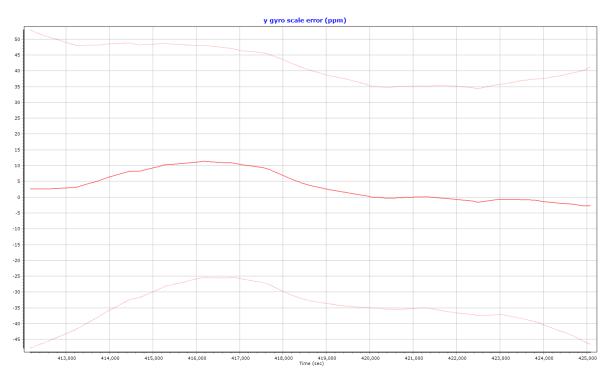


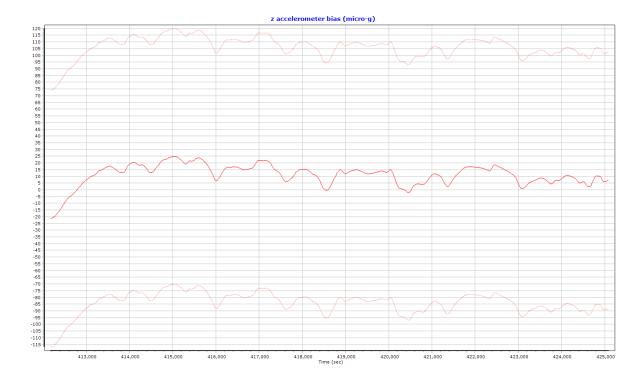


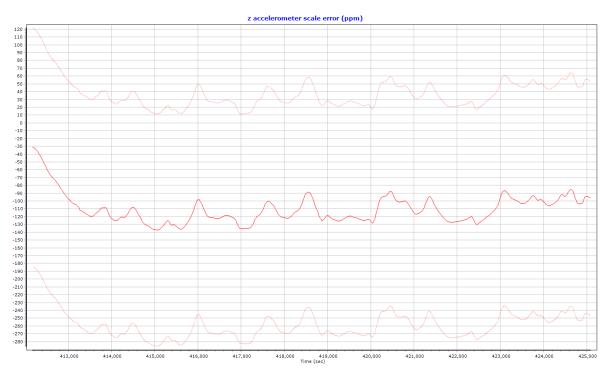


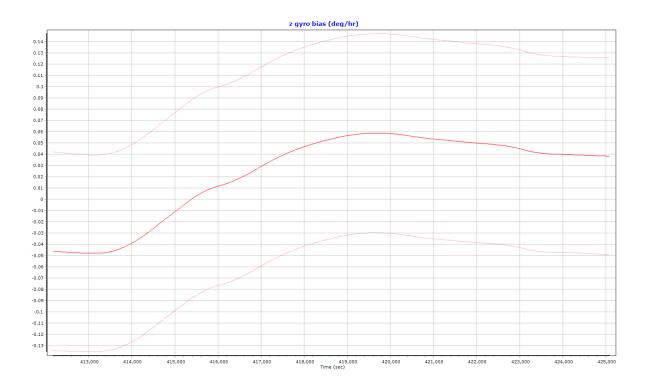


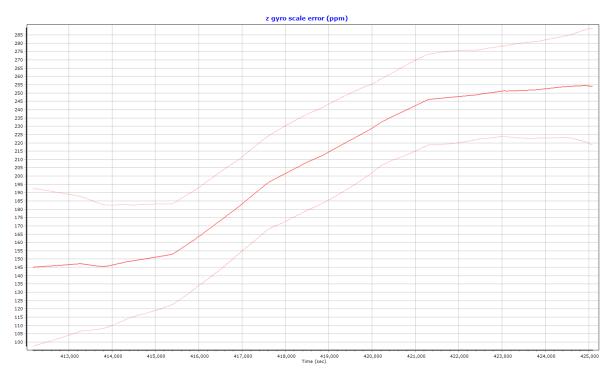


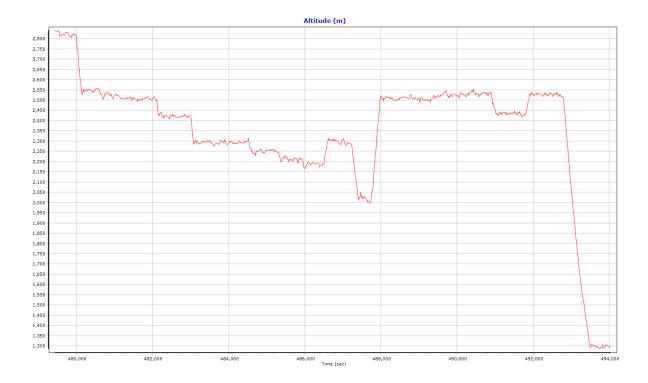


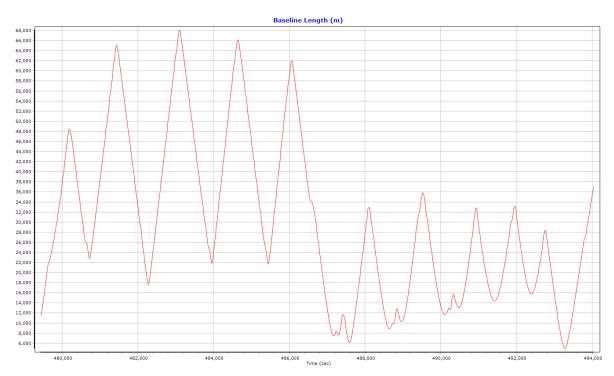


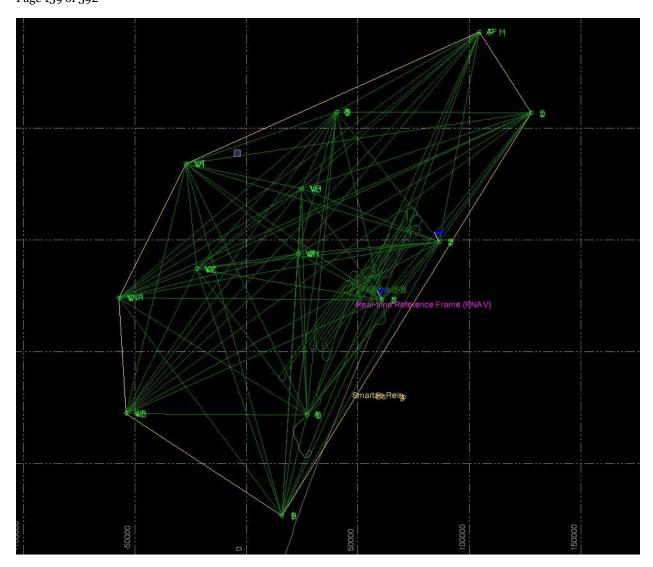


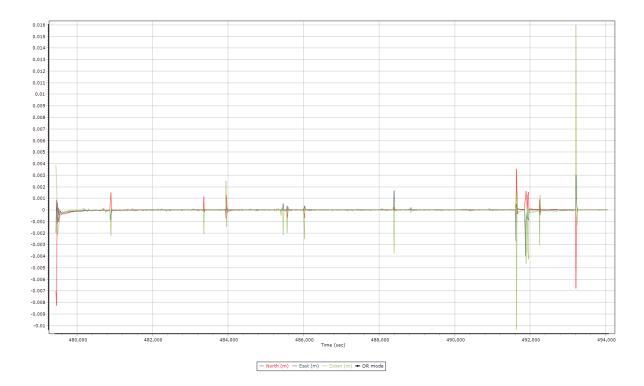


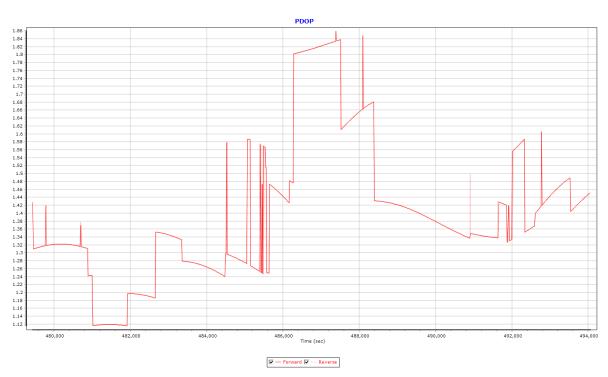


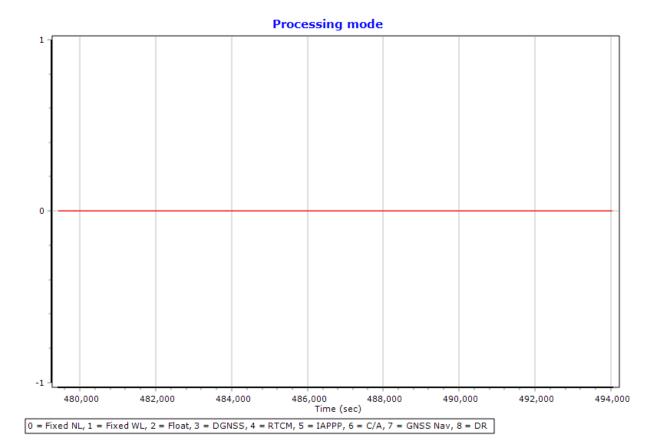


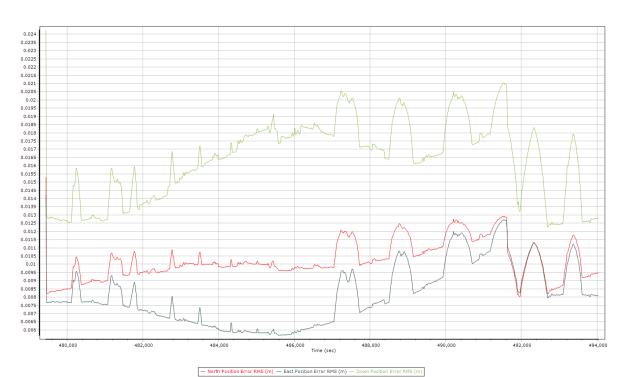


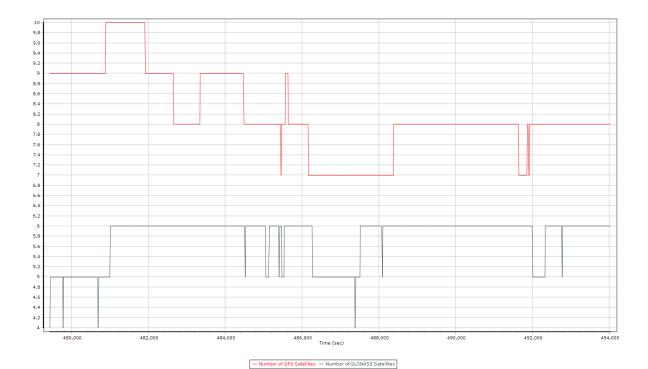


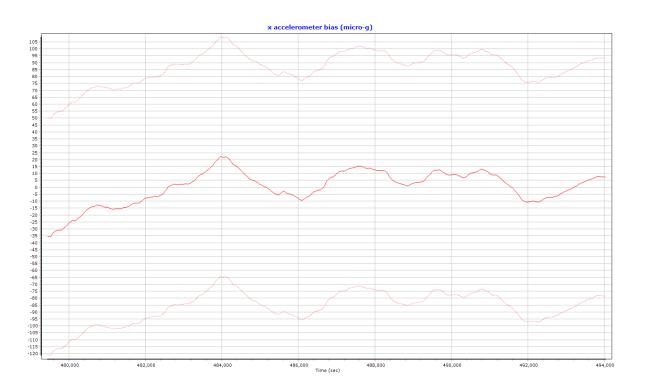


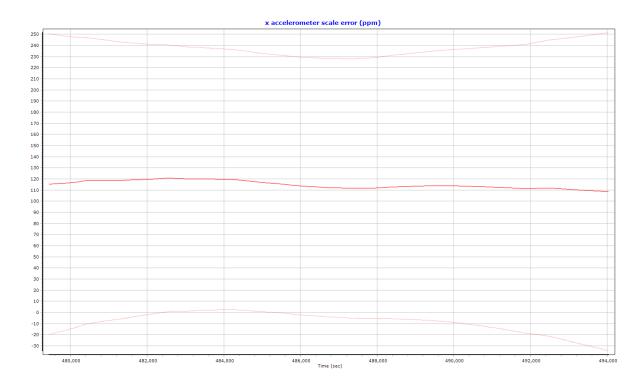


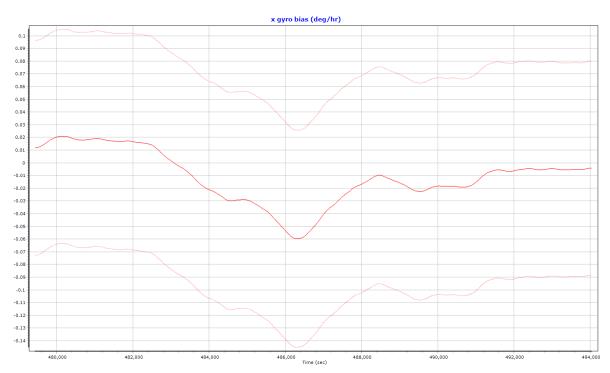


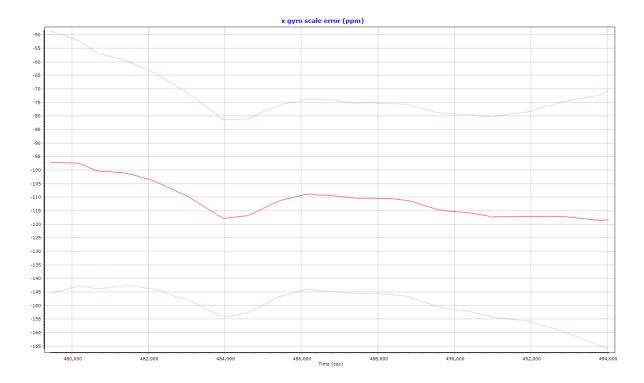


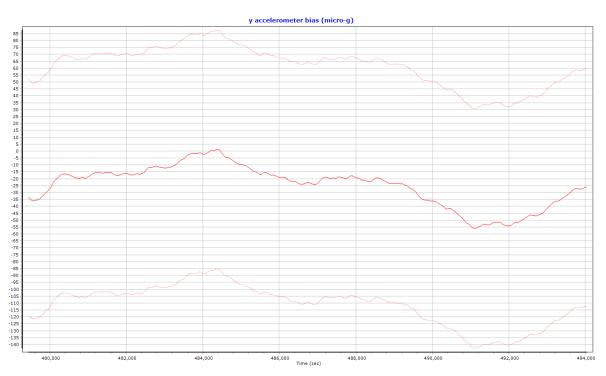


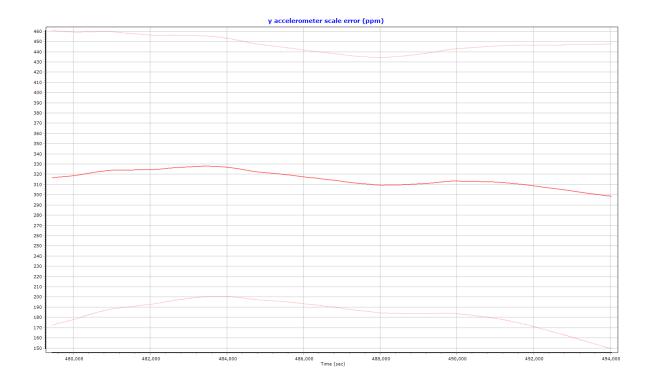


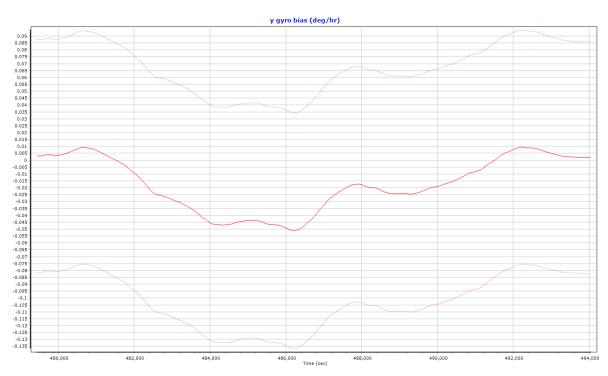


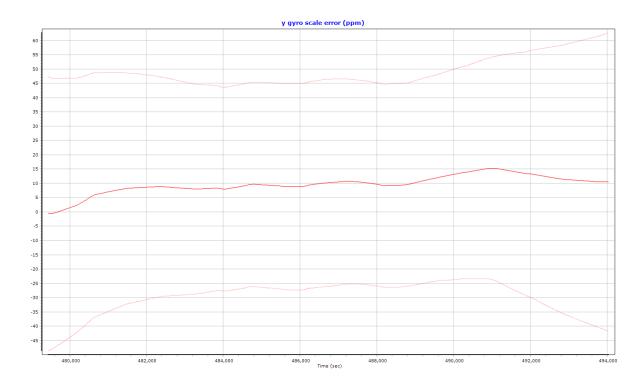


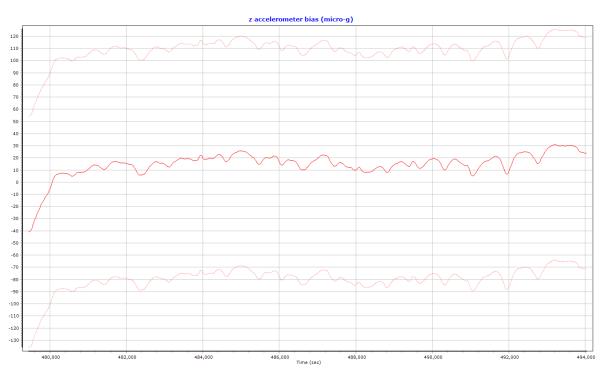


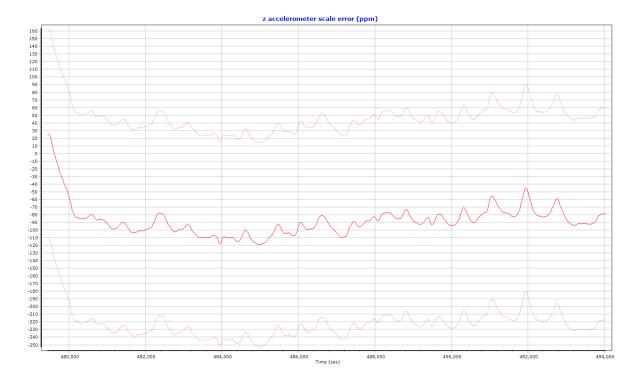


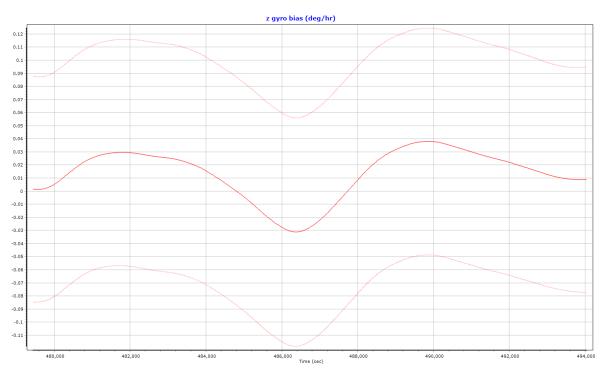


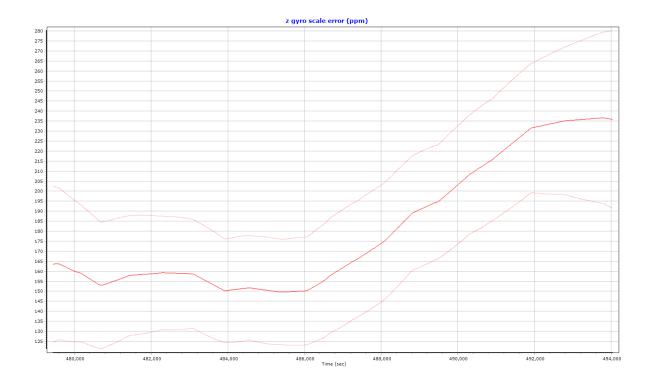






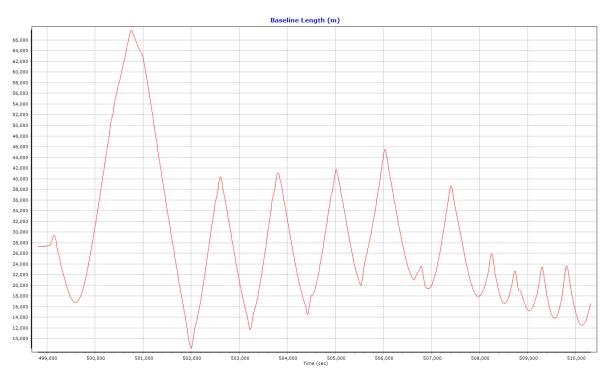


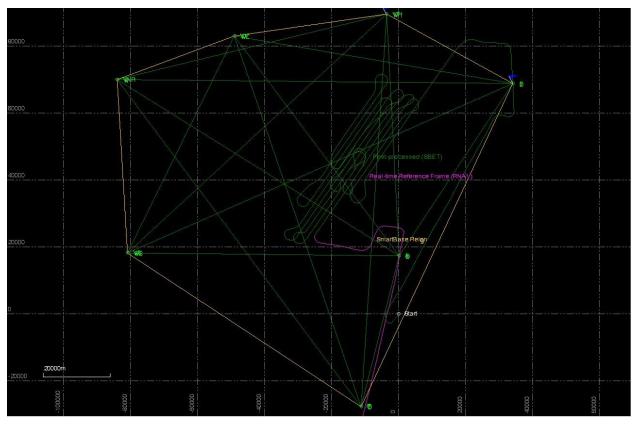


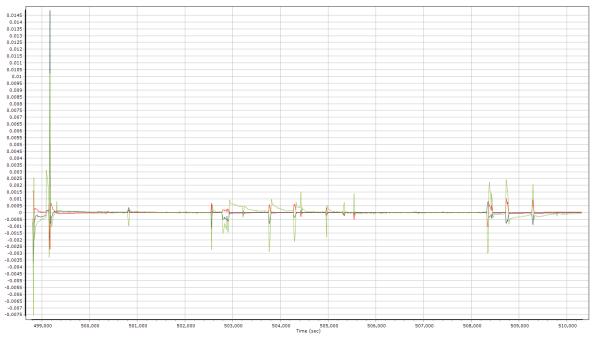


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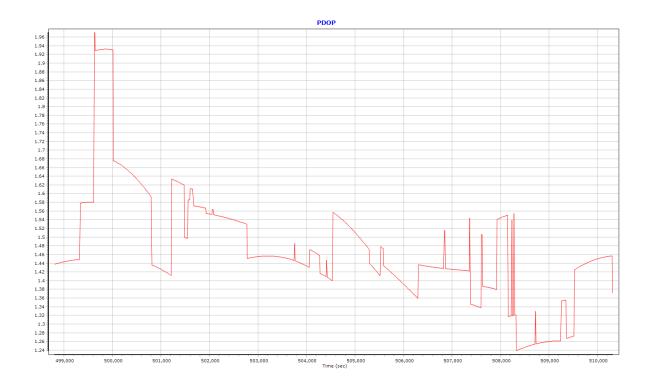


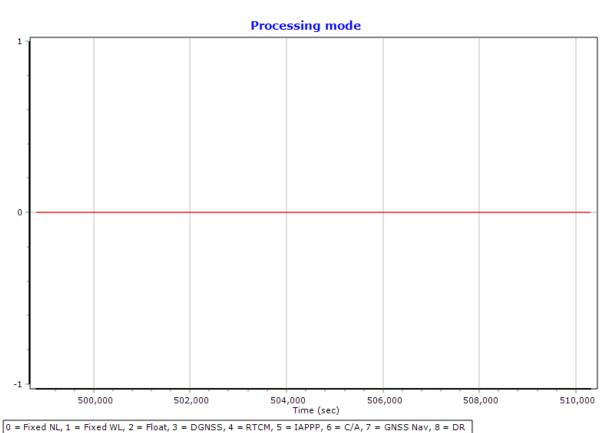


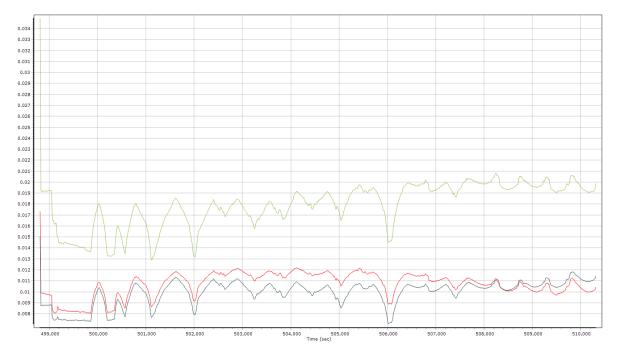


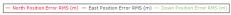


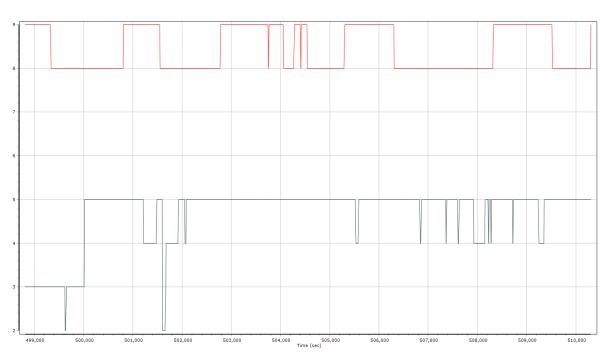
— North (m) — East (m) — Down (m) → DR mode



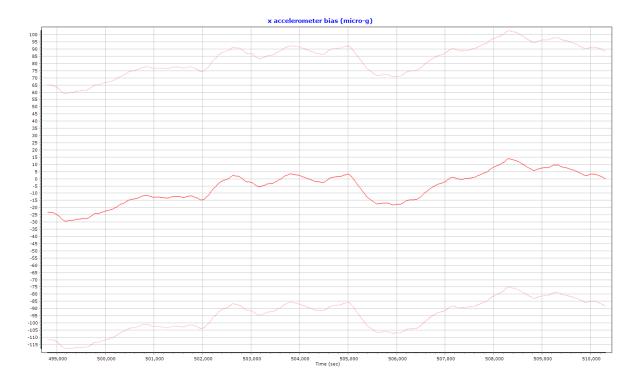


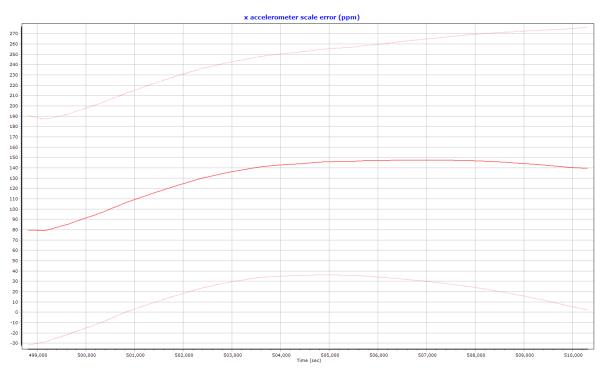


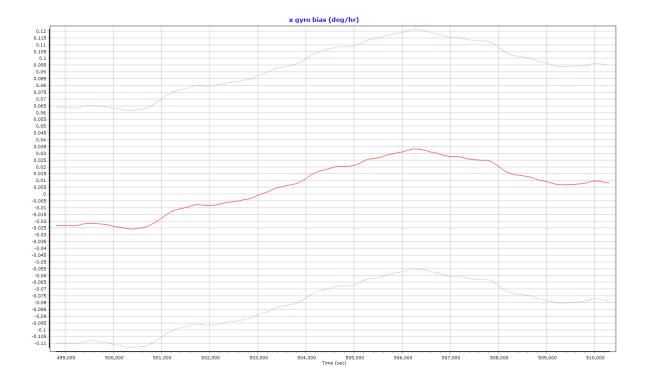


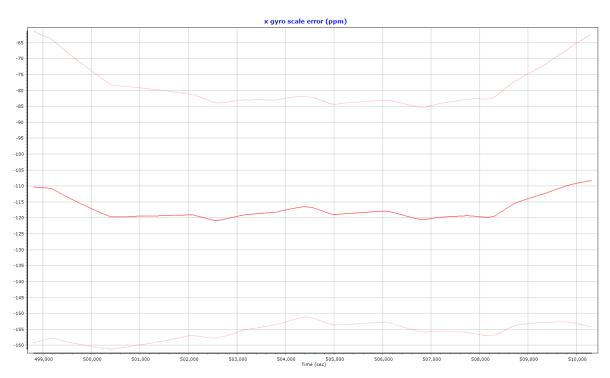


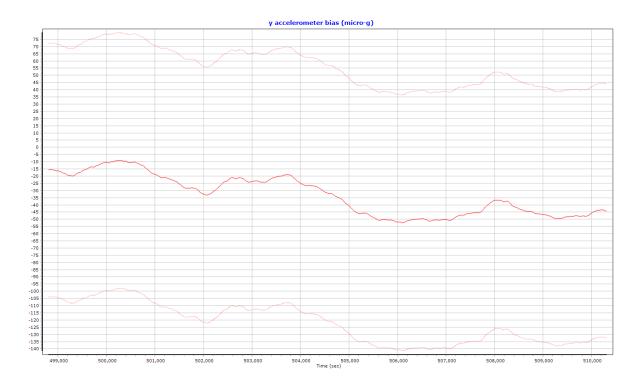
— Number of GPS Satellites — Number of GLONASS Satellites

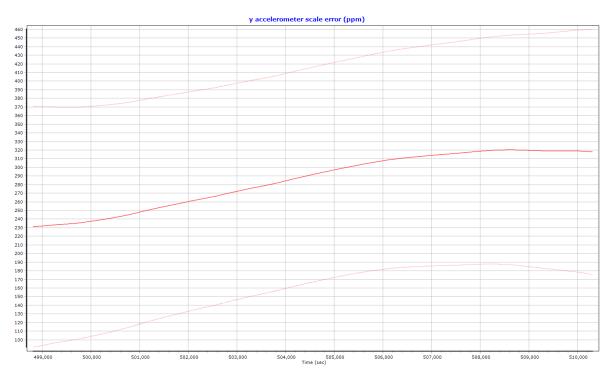


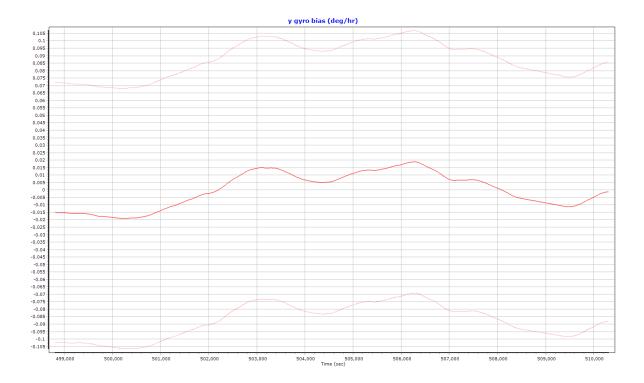


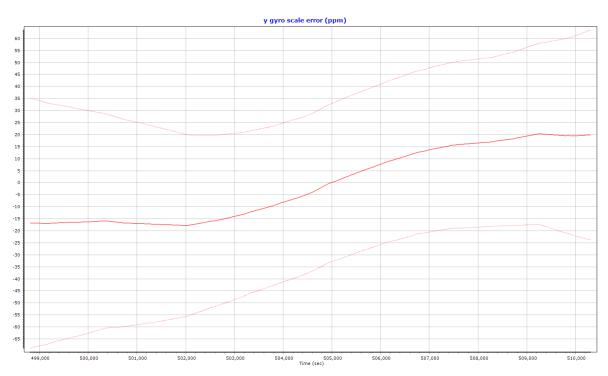


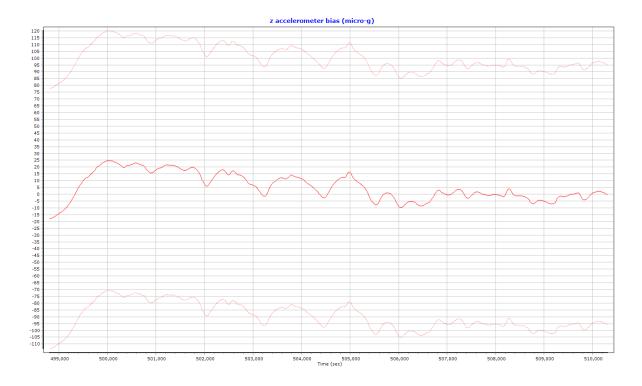




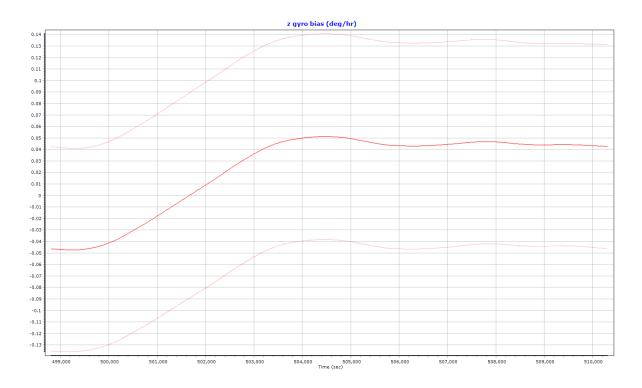


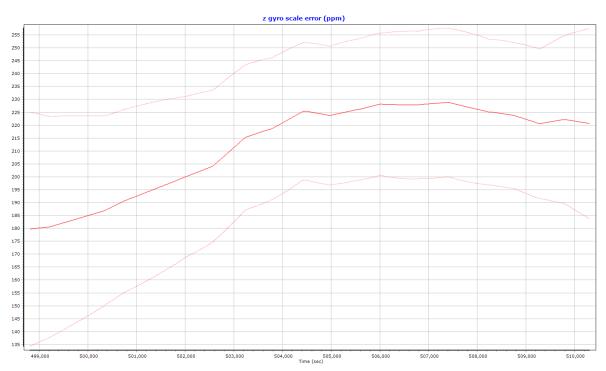


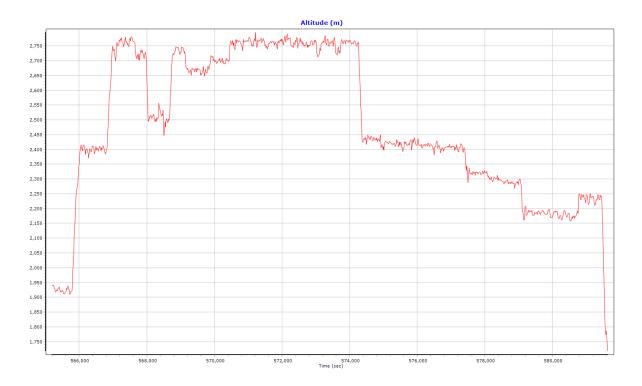


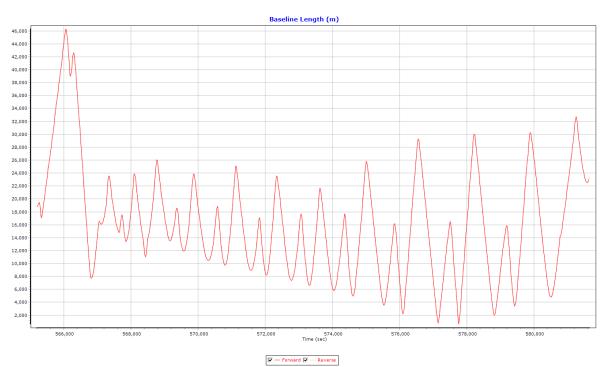


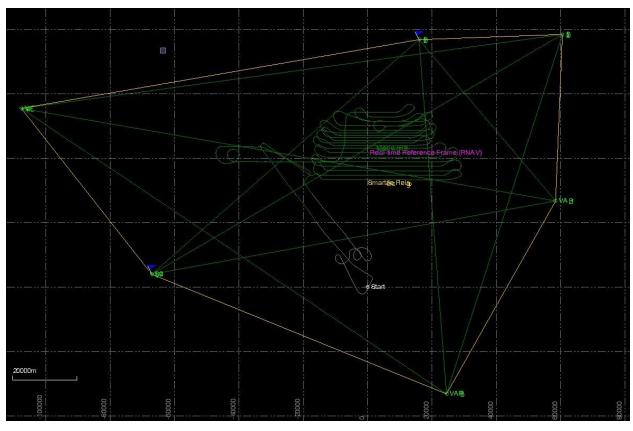




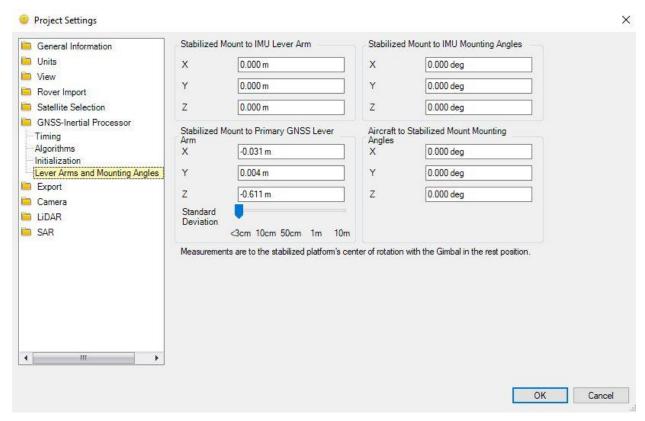


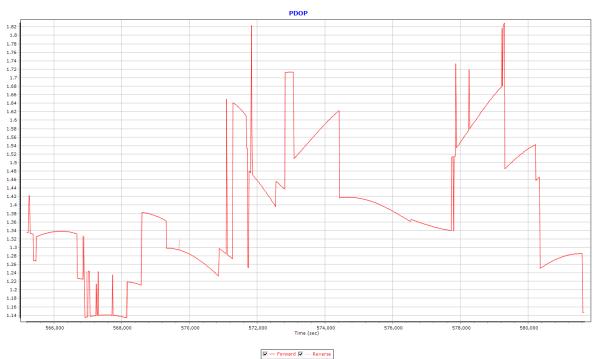


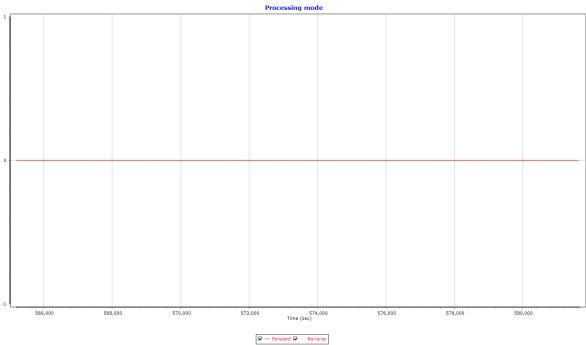




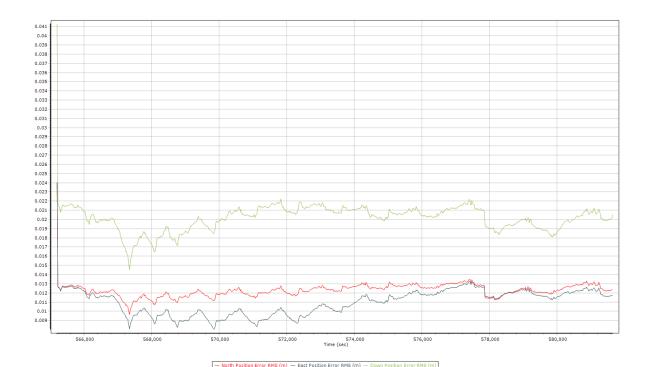


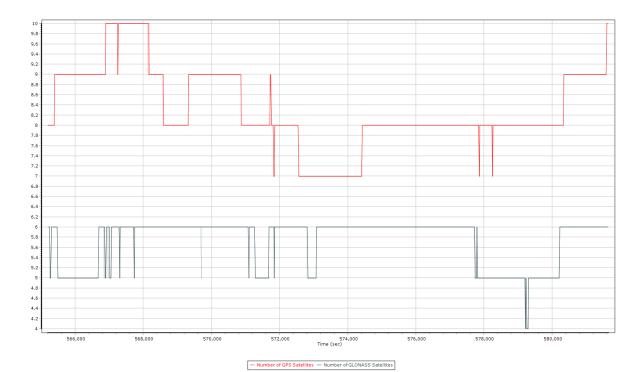


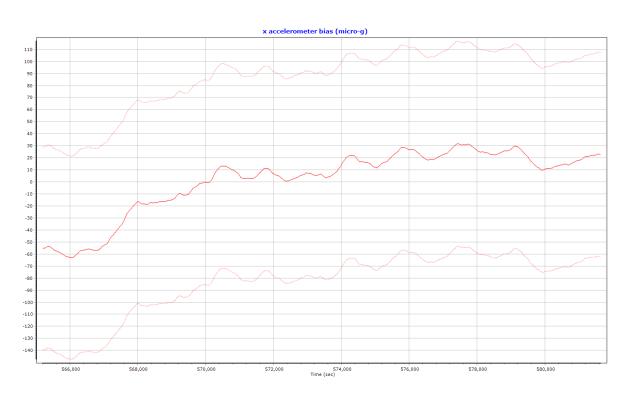


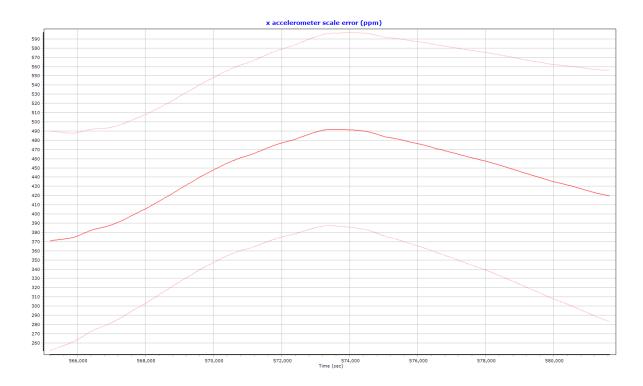


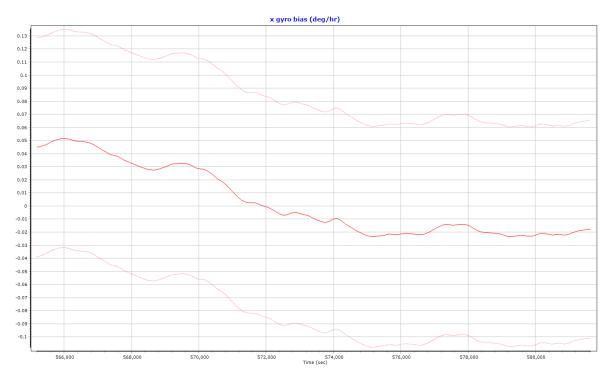
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

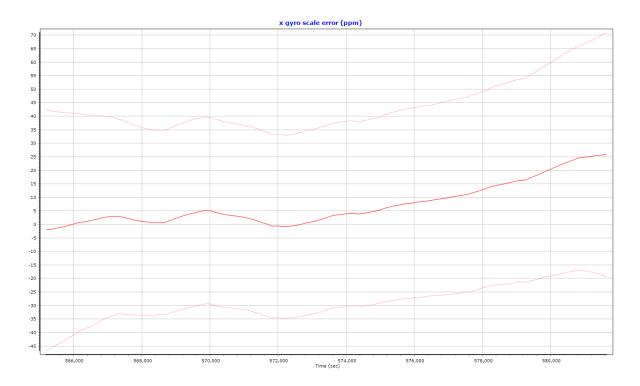


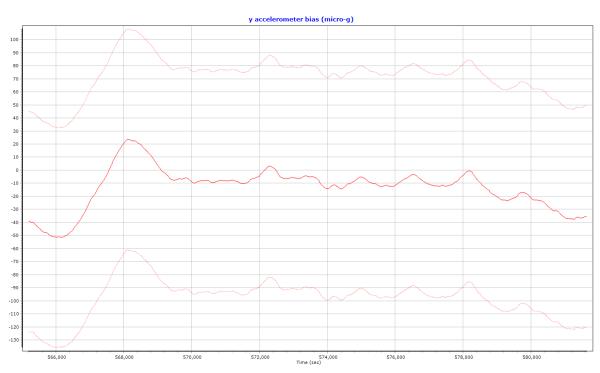


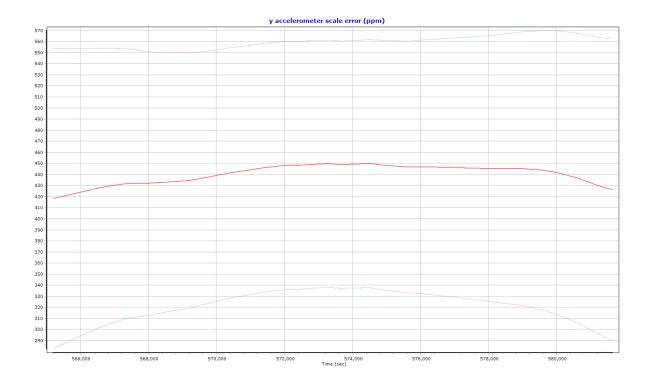


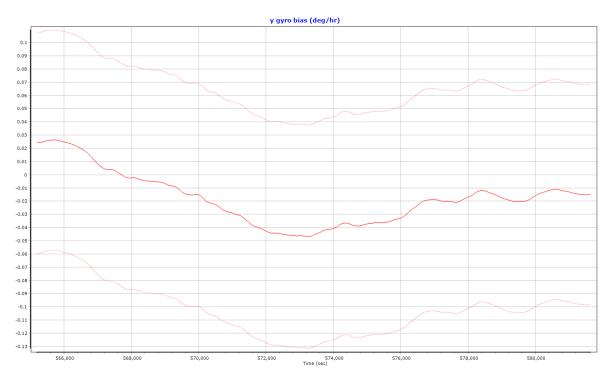


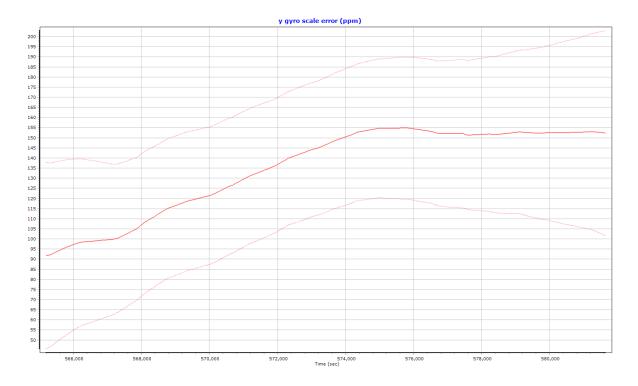


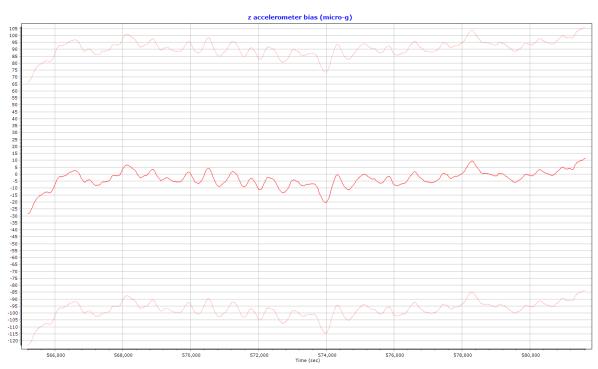


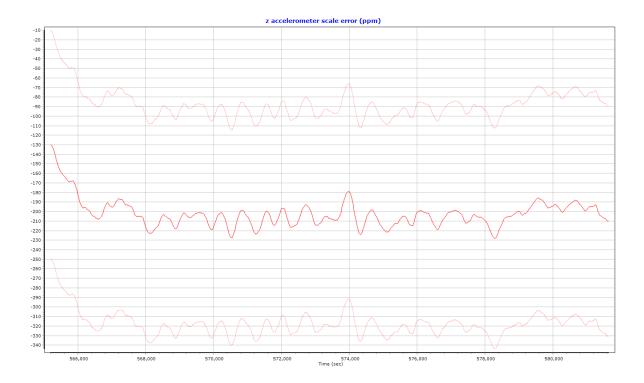


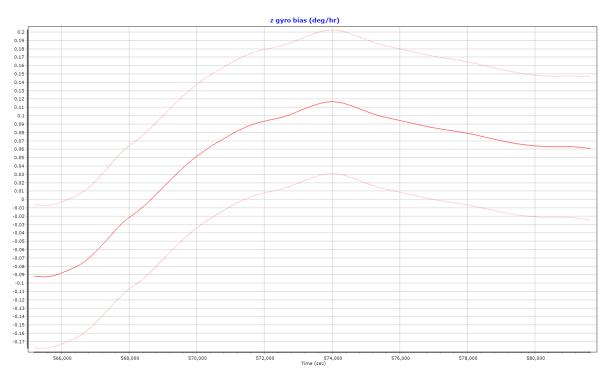


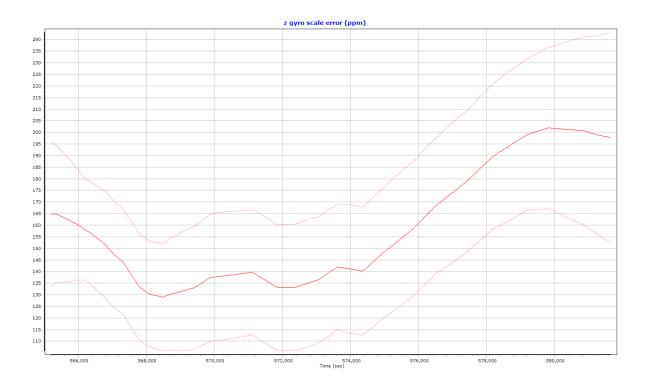






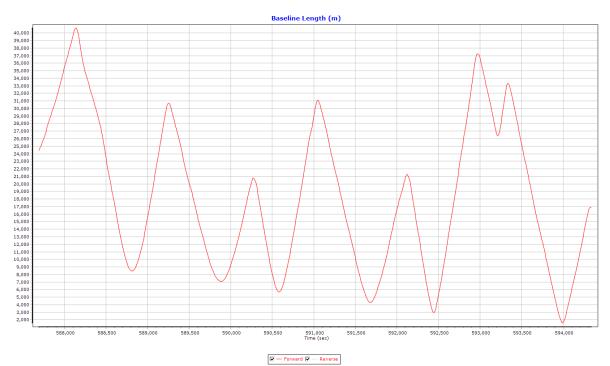


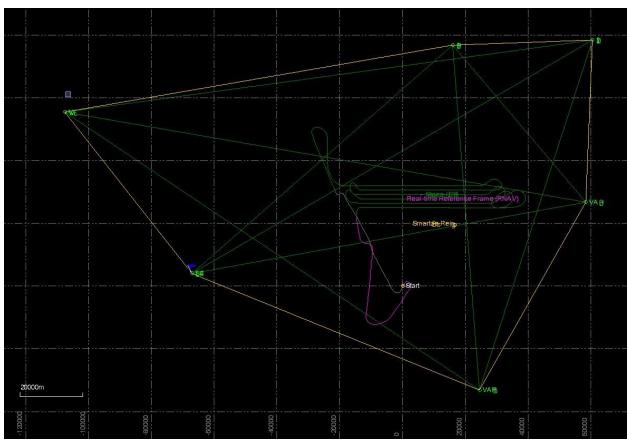


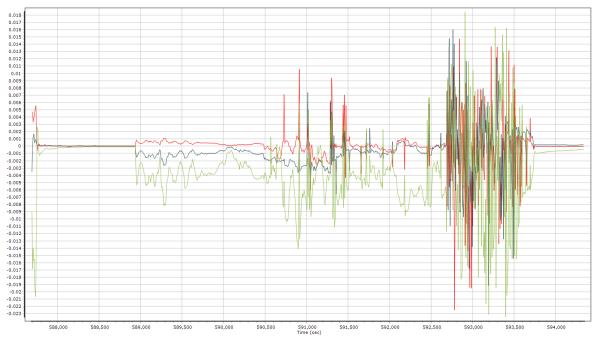


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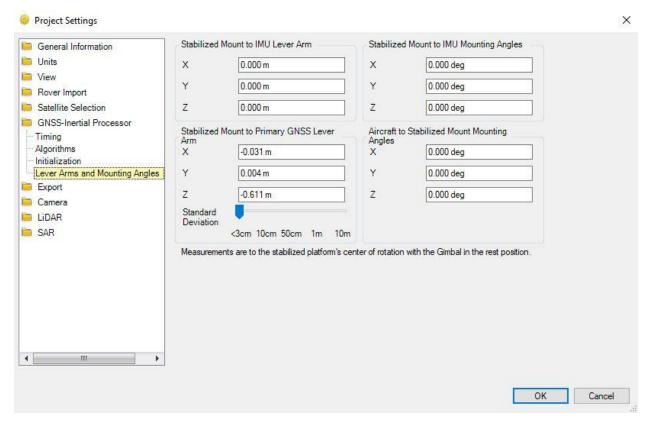


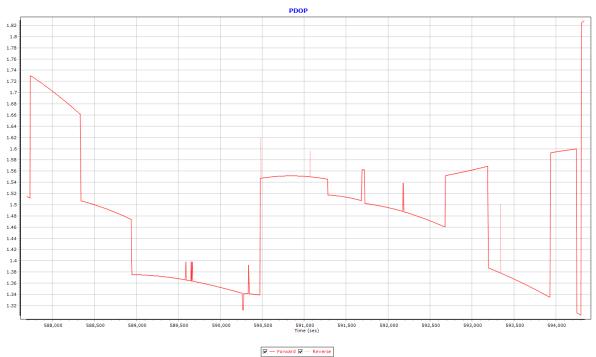


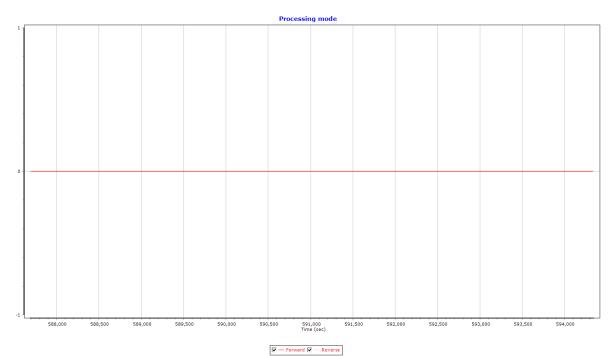




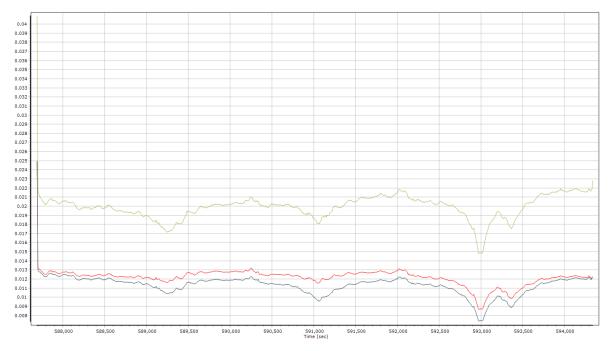
— North (m) — East (m) — Down (m) → DR mode



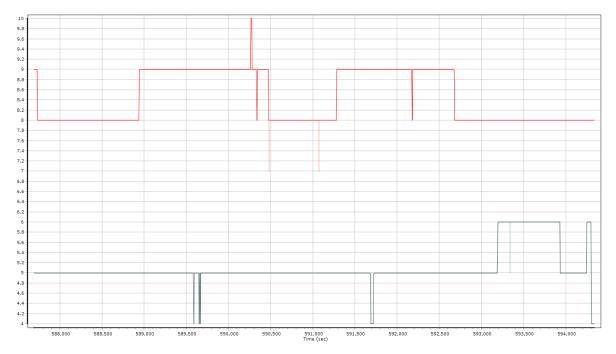




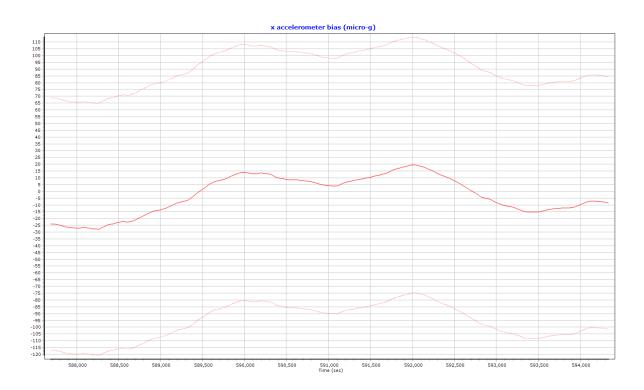
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

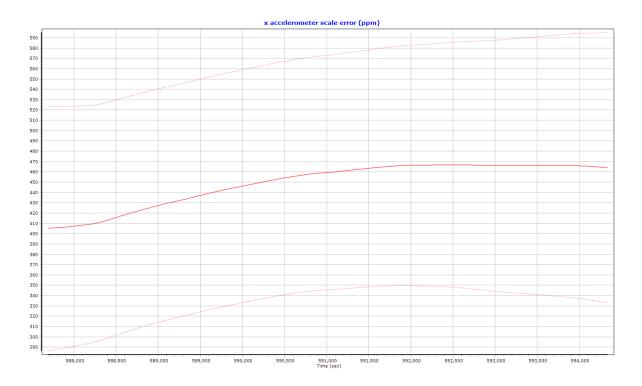


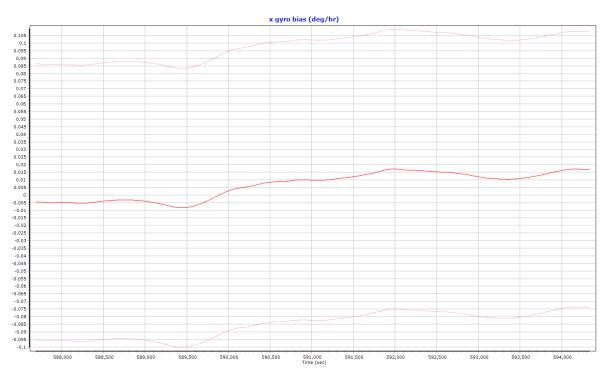
 $\boxed{ \color{red} - \text{North Position Error RMS (m)} - \text{East Position Error RMS (m)} - \text{Down Position Error RMS (m)} }$

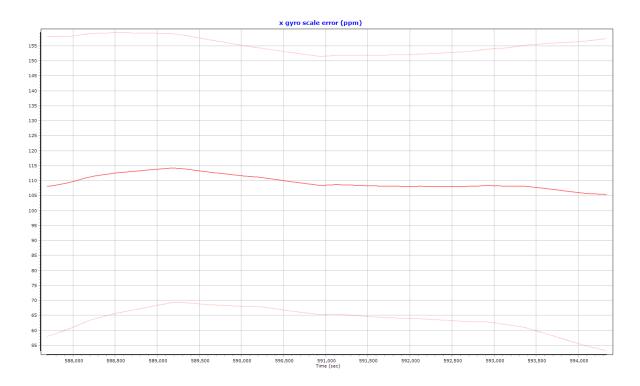


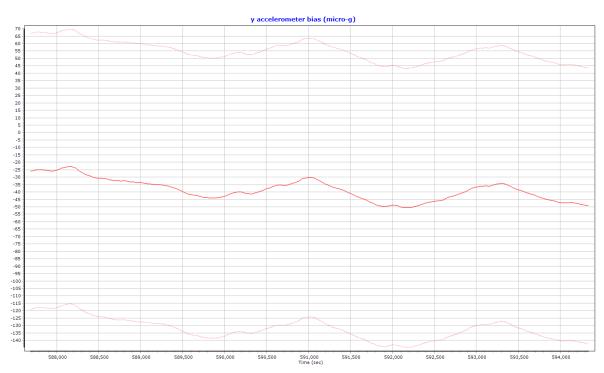


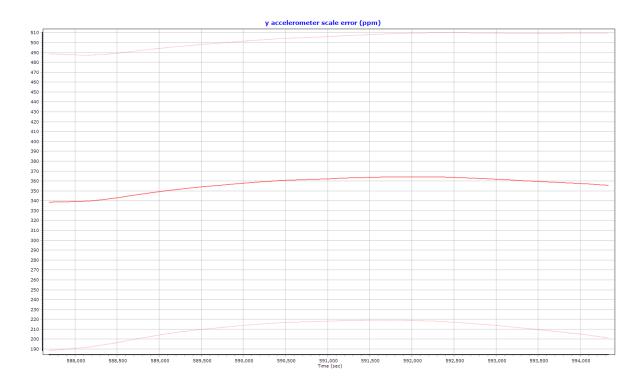


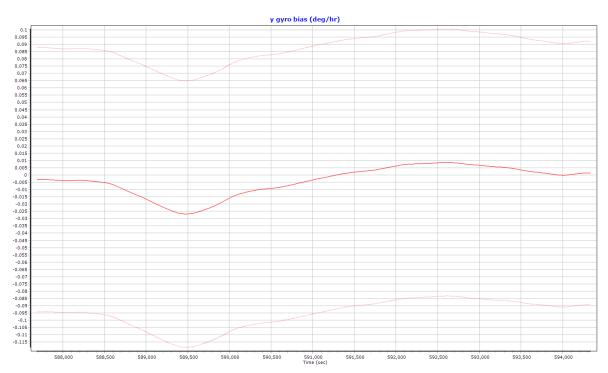


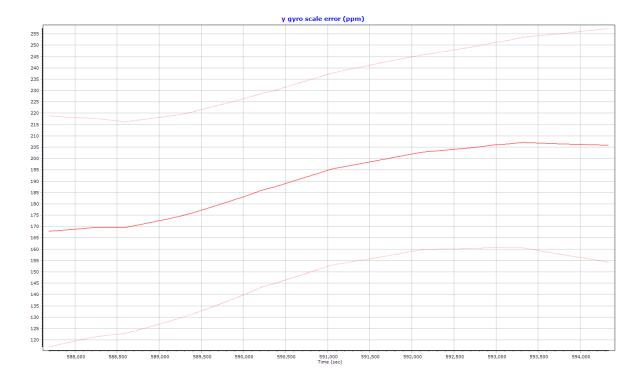


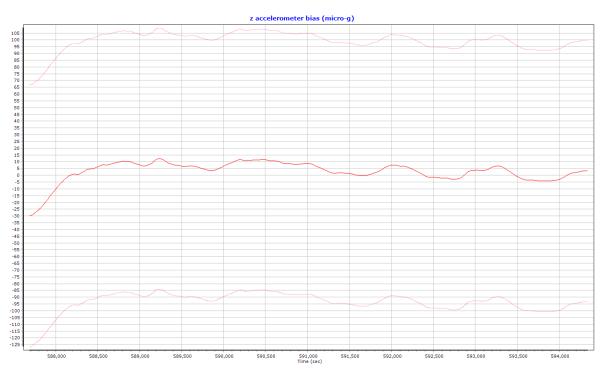


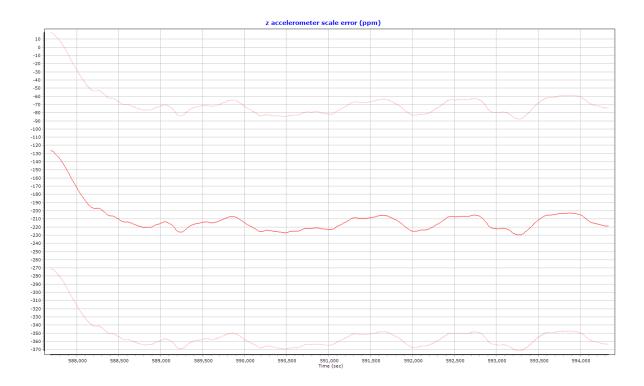


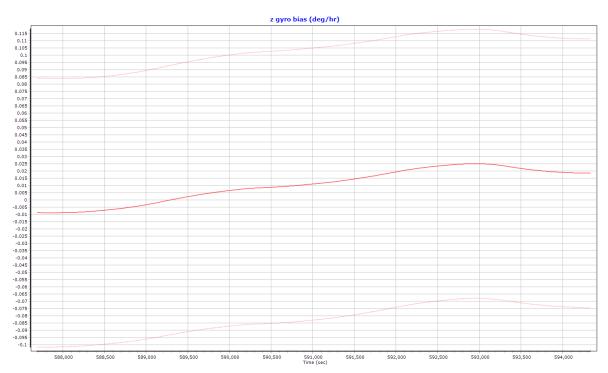


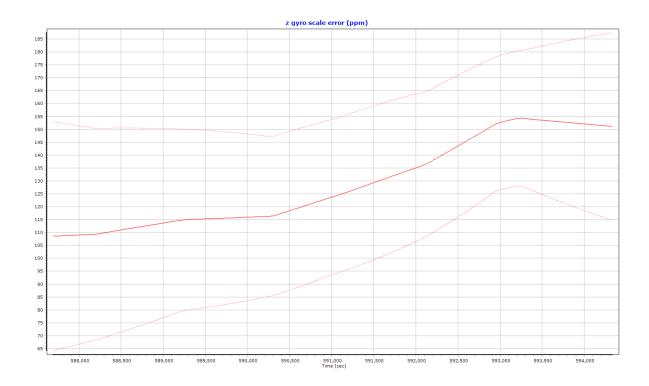






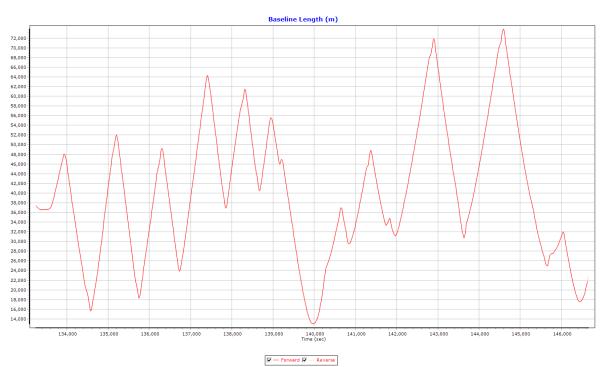


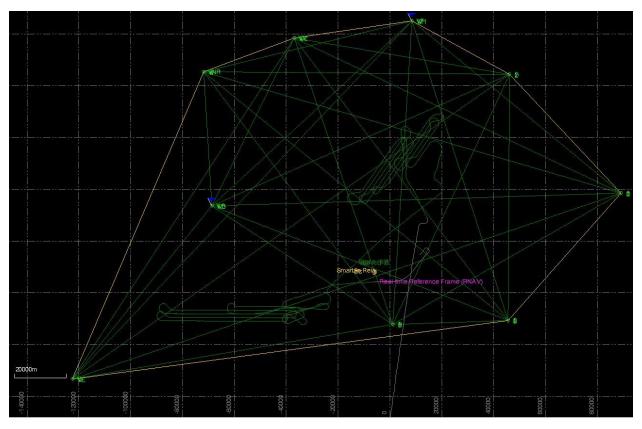




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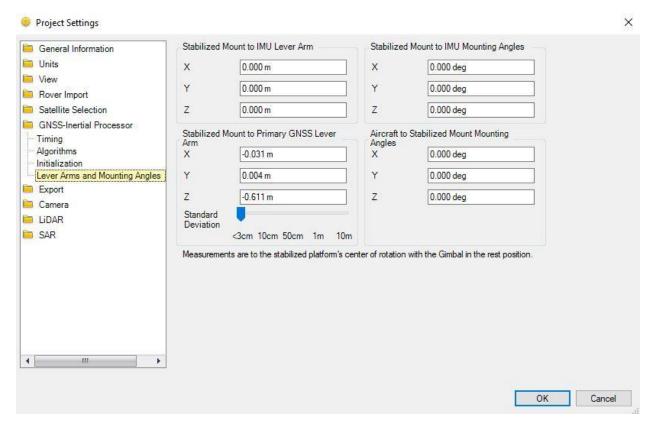


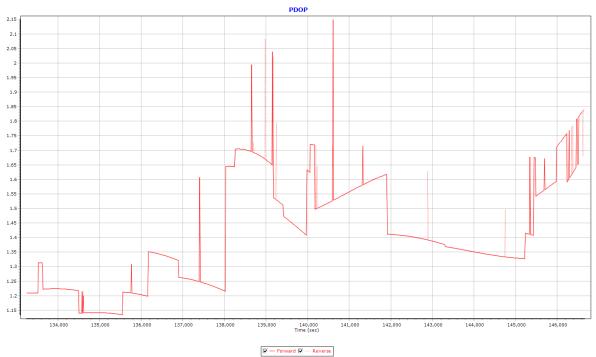


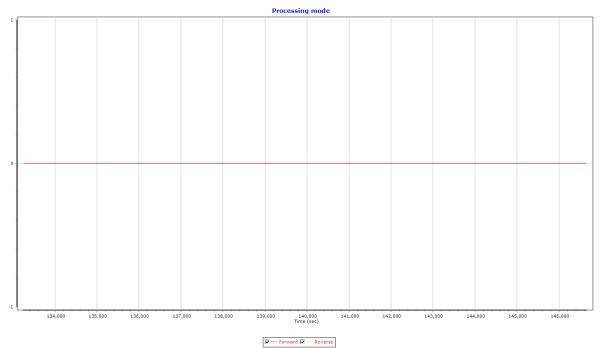




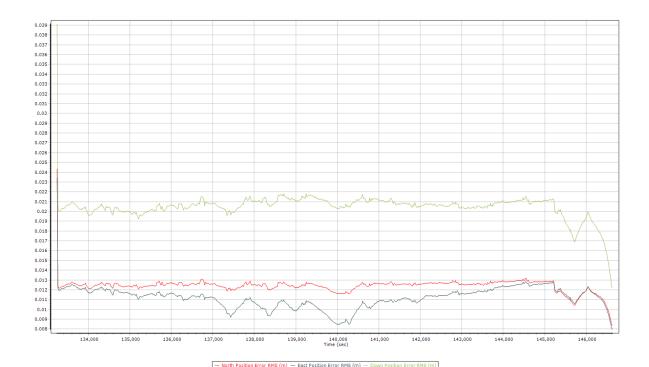
— North (m) — East (m) — Down (m) → DR mode

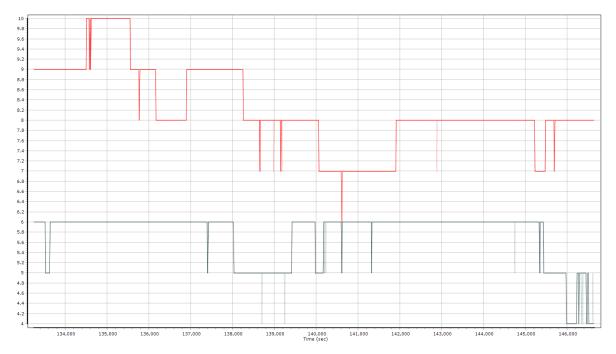




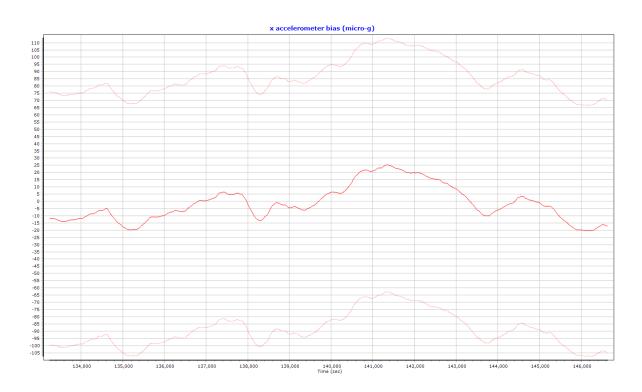


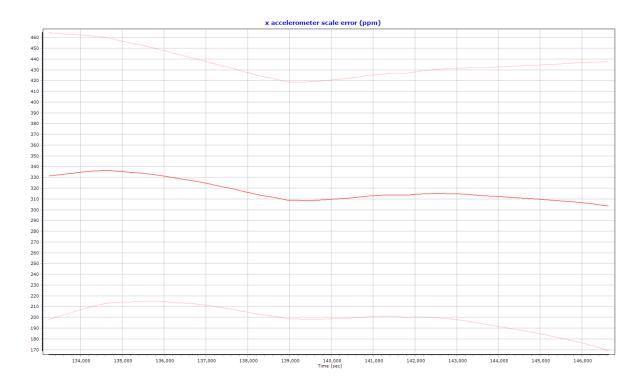
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

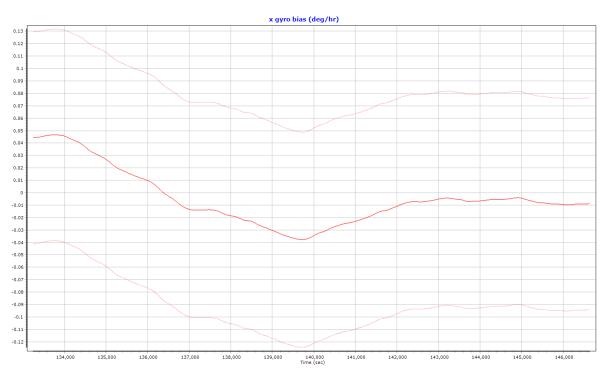


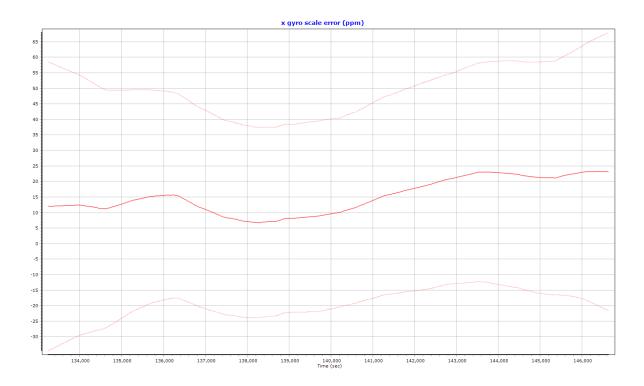


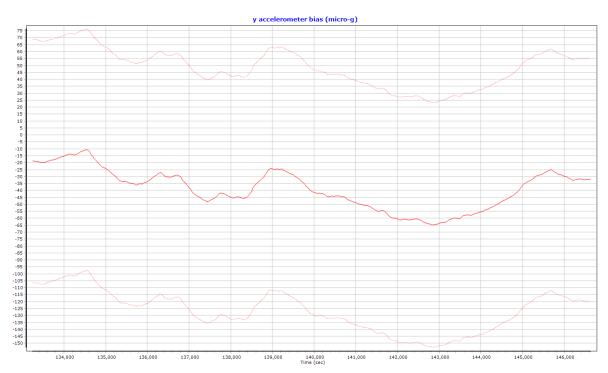


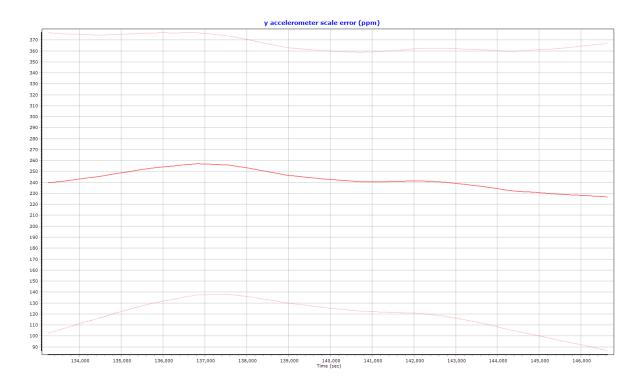


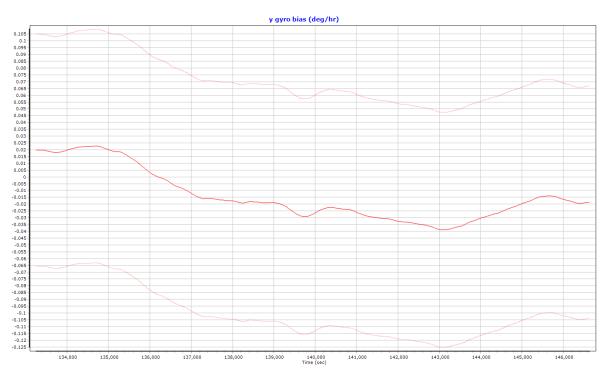


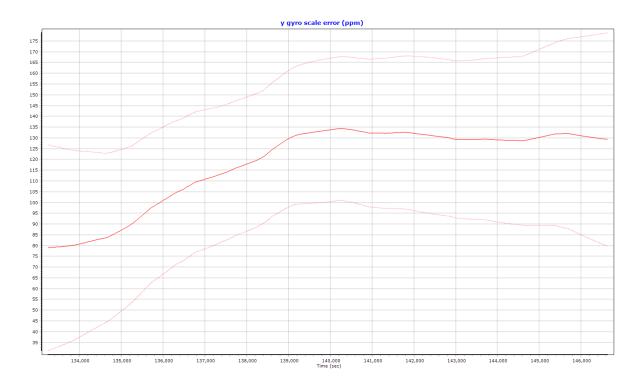


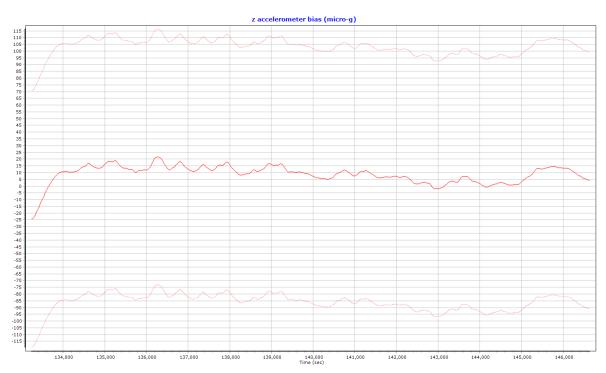


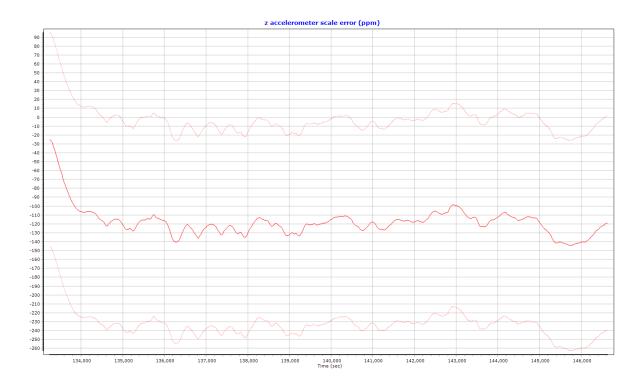


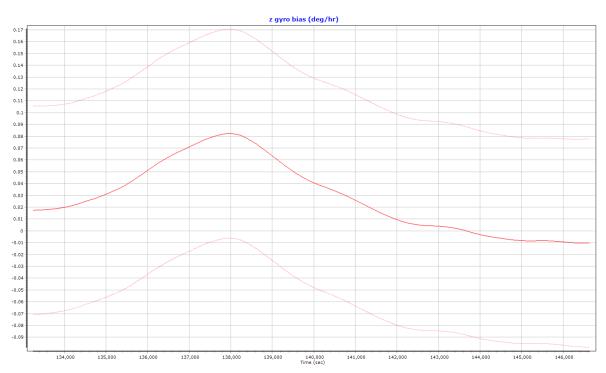


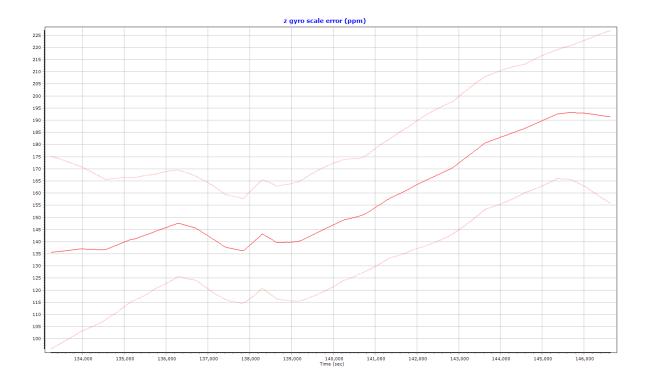




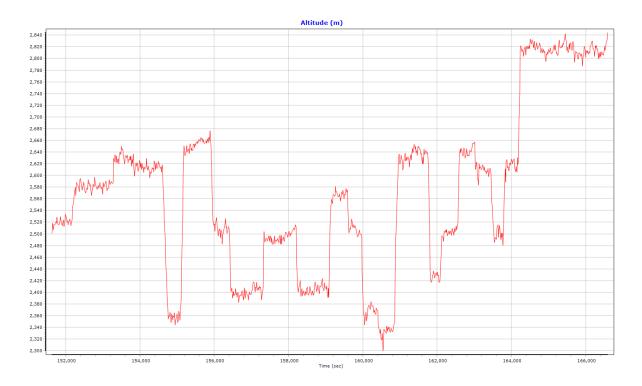


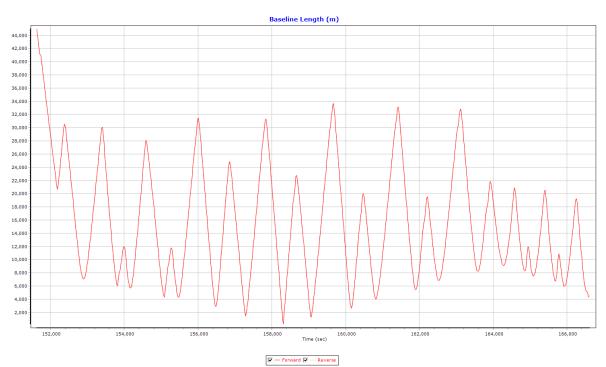


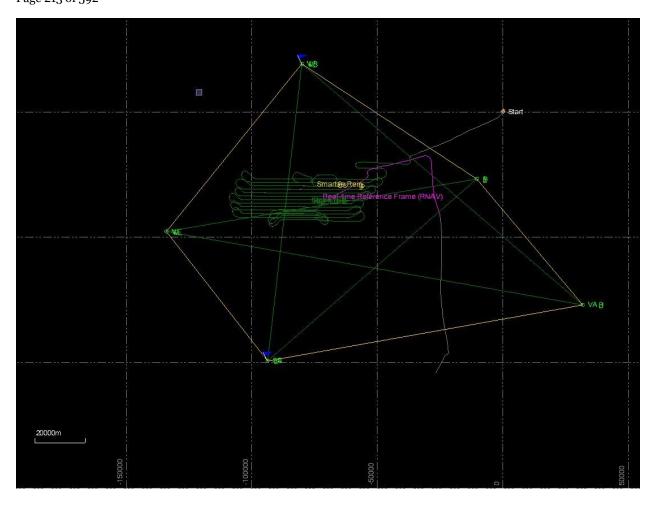




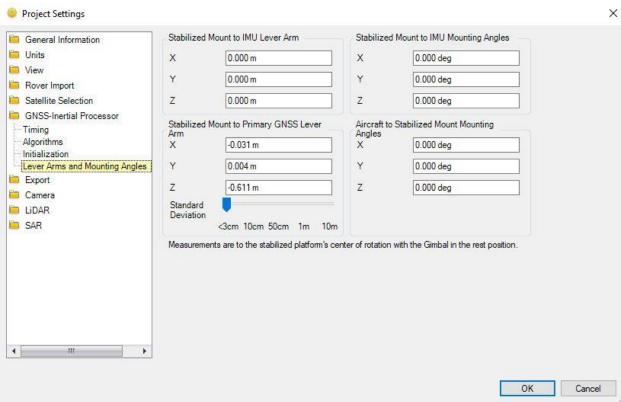
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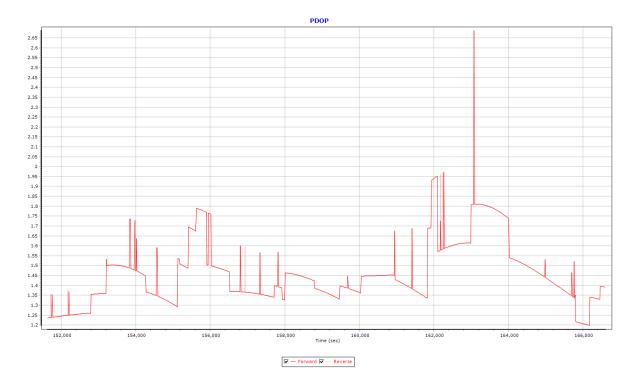


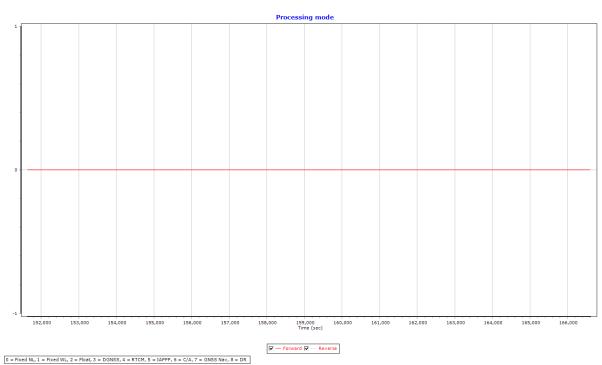


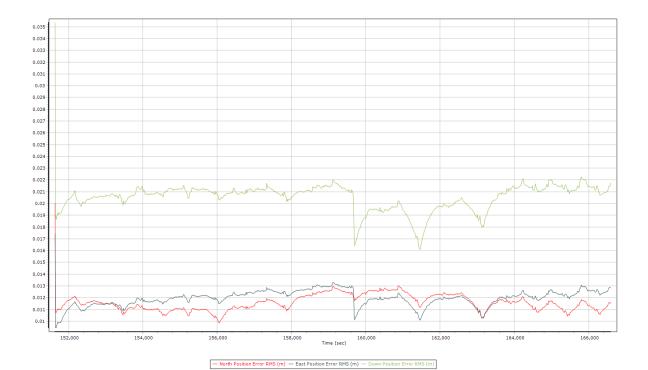


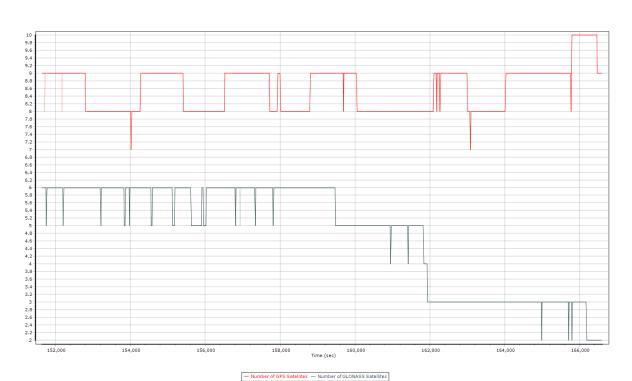


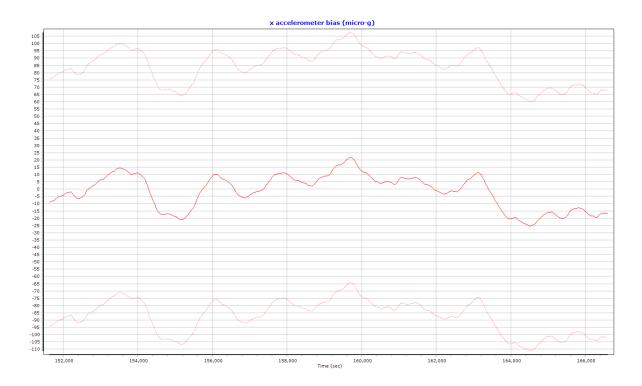


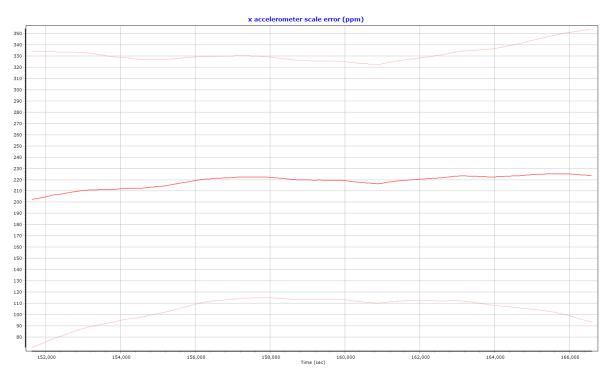


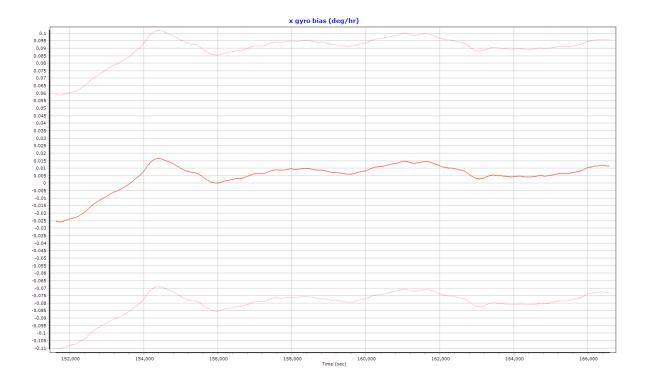


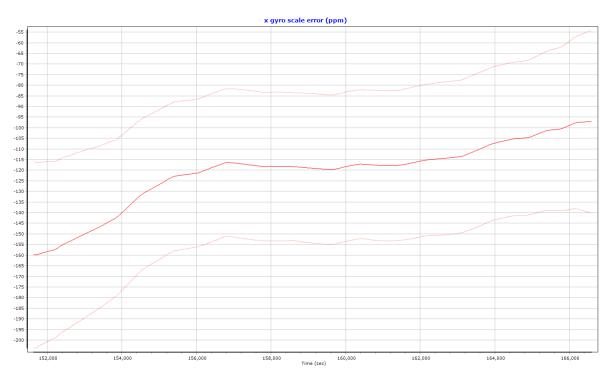


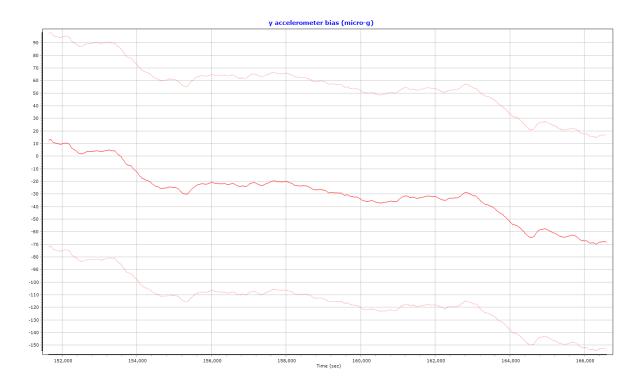


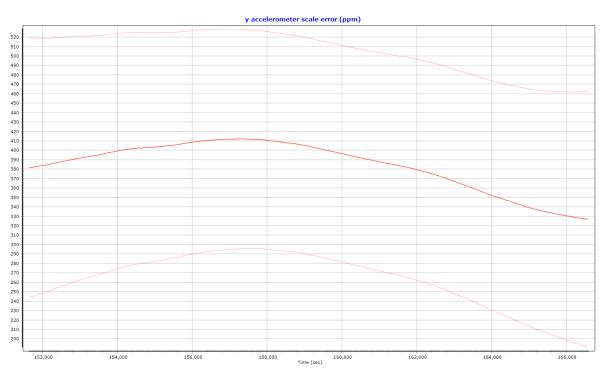


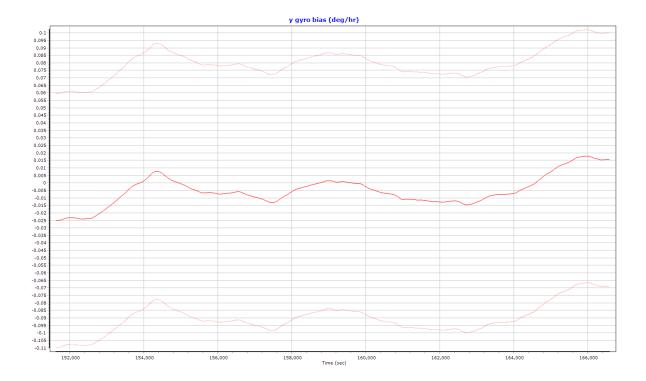


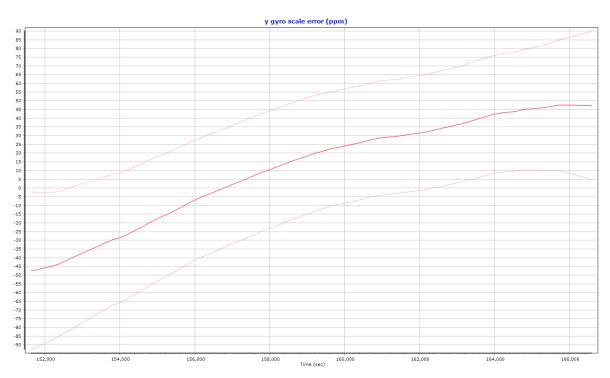


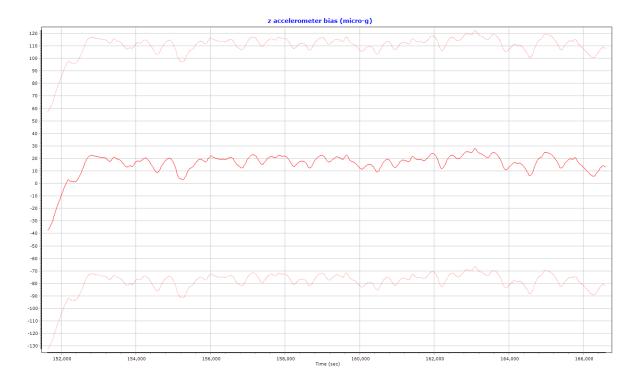


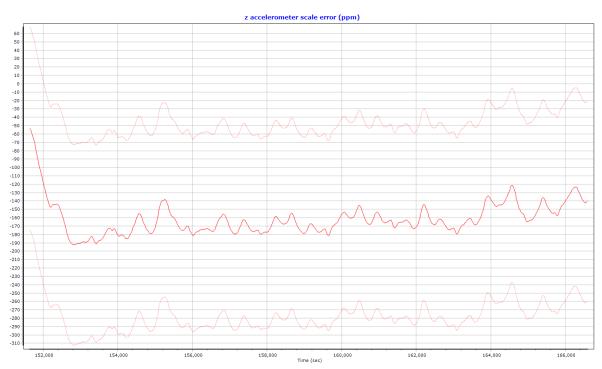


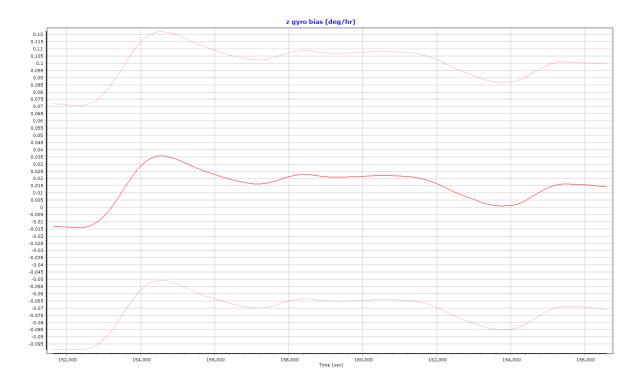


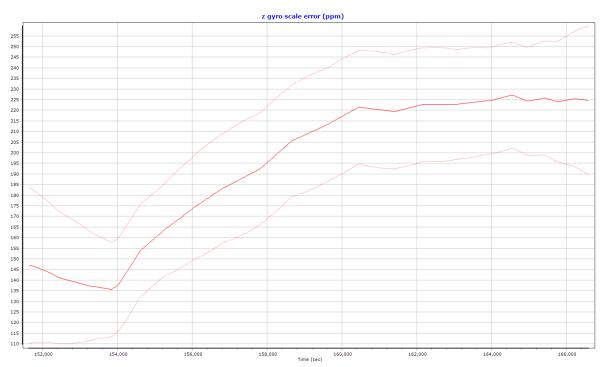


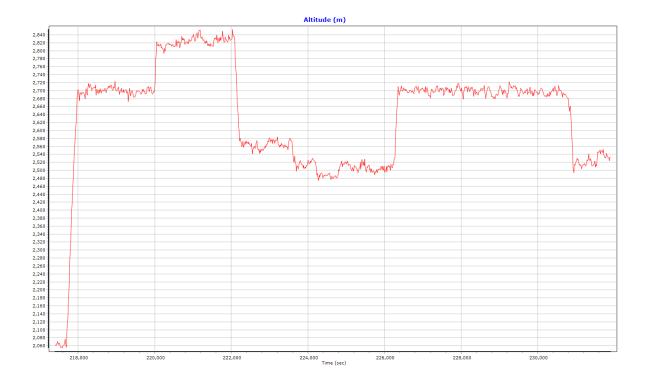


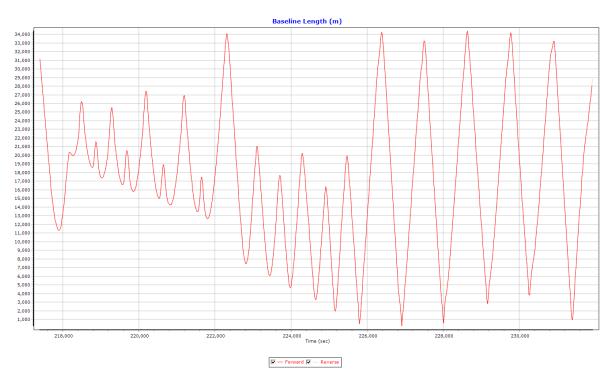


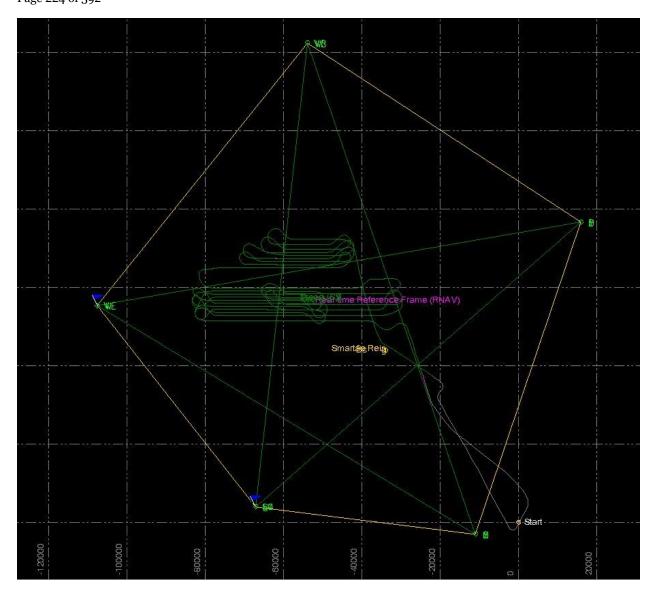




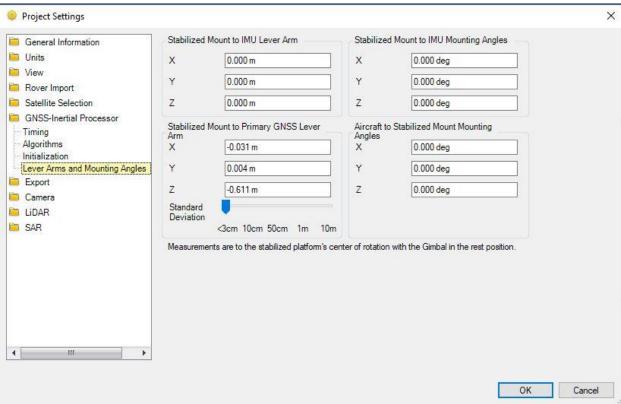






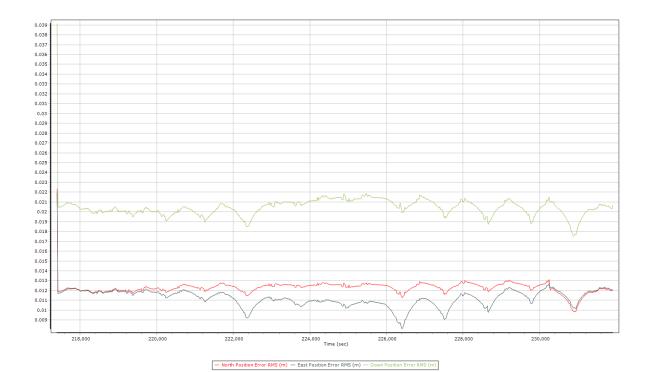


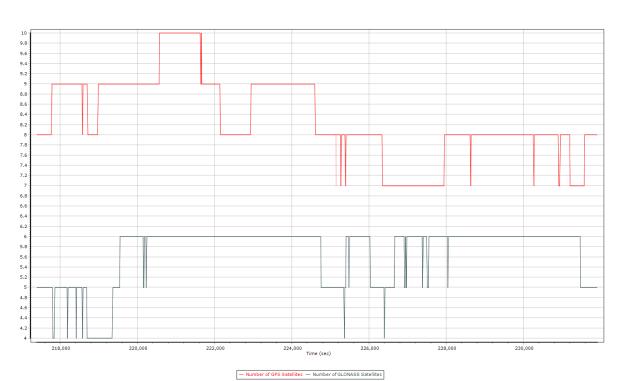


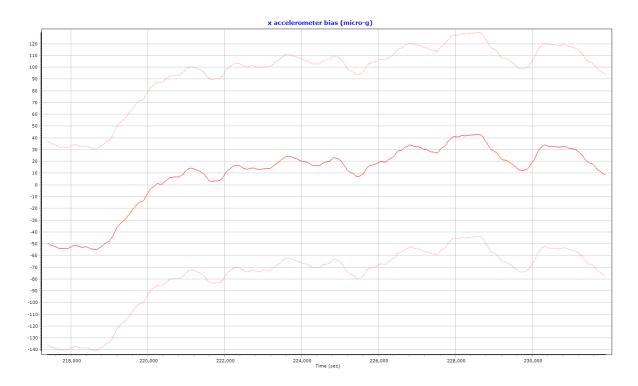


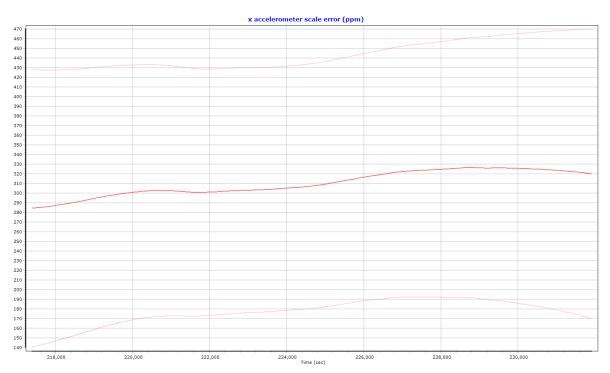


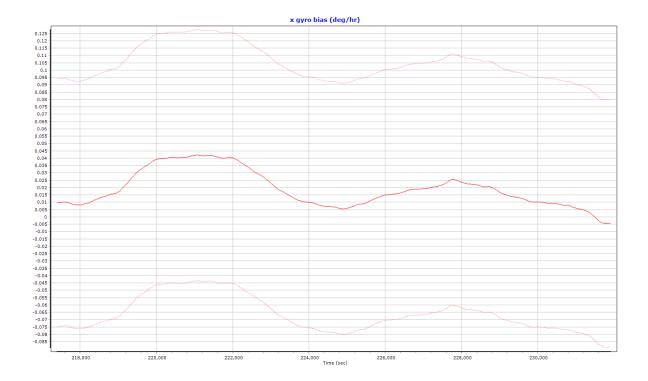


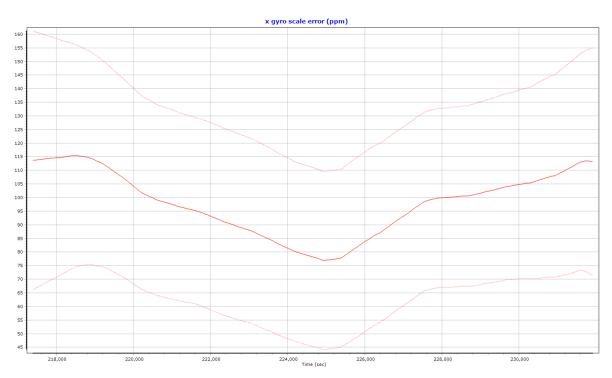


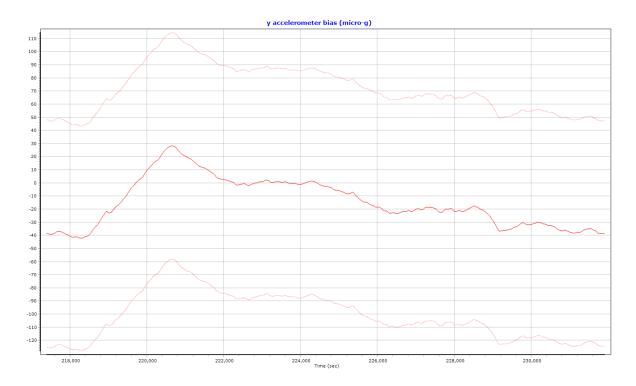


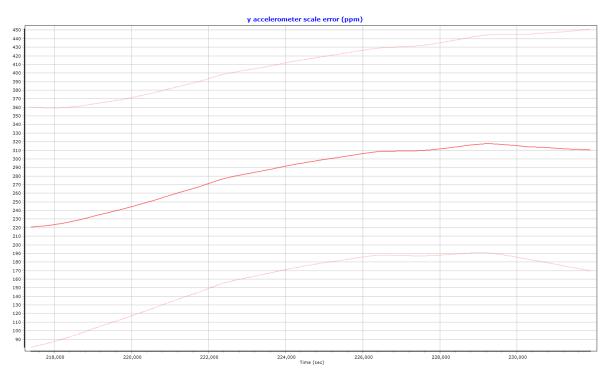


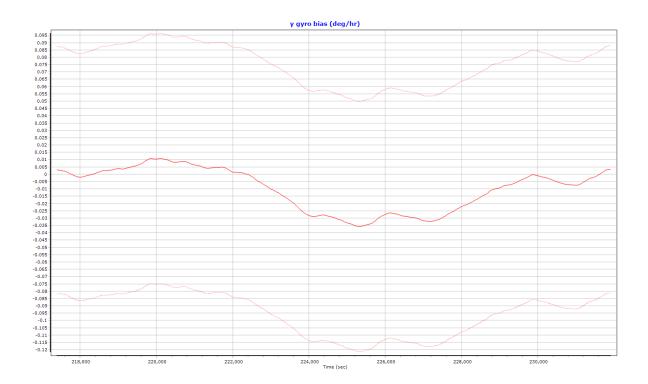


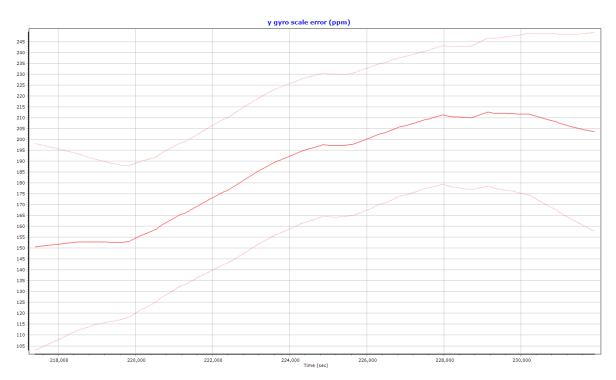


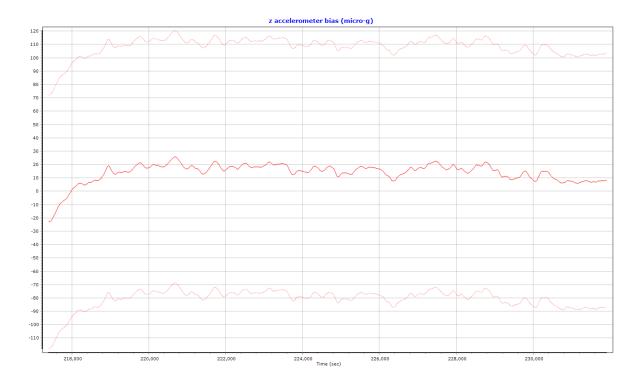




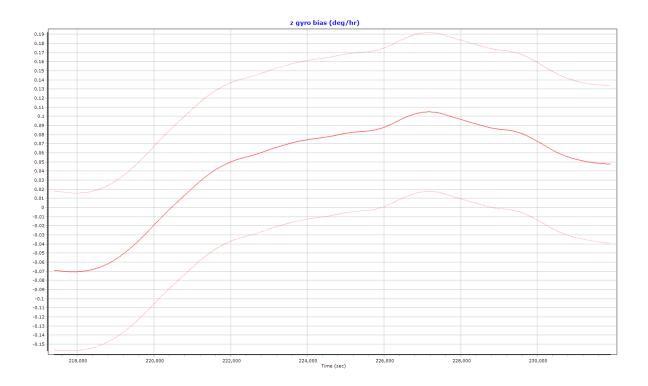


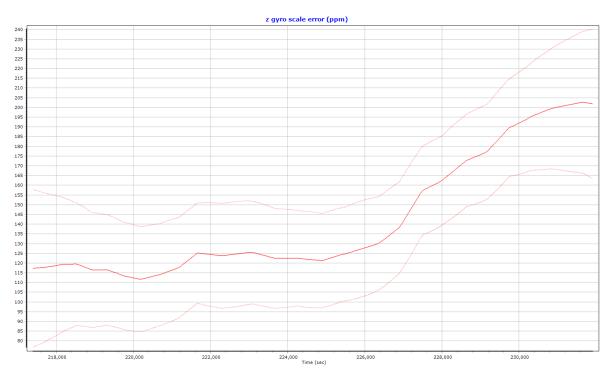




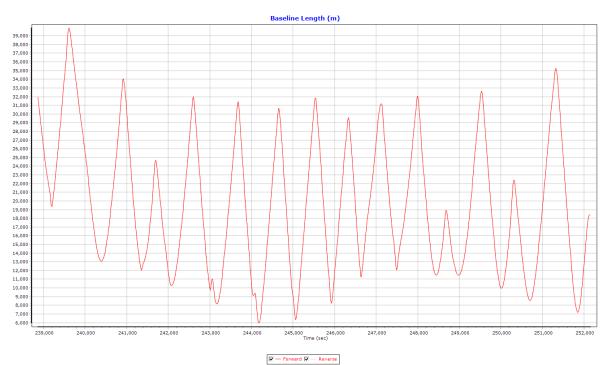


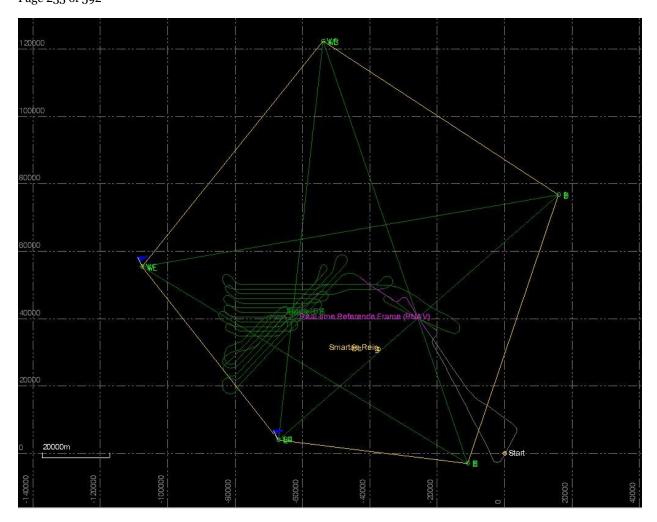


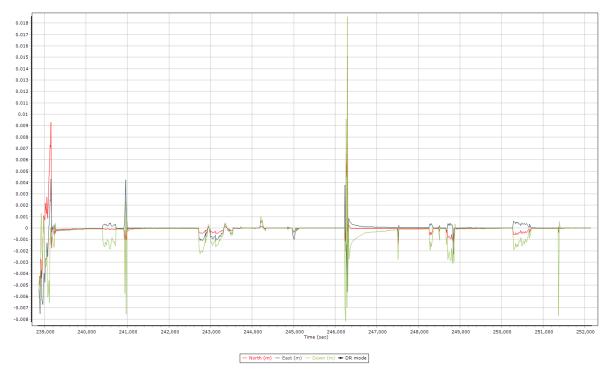


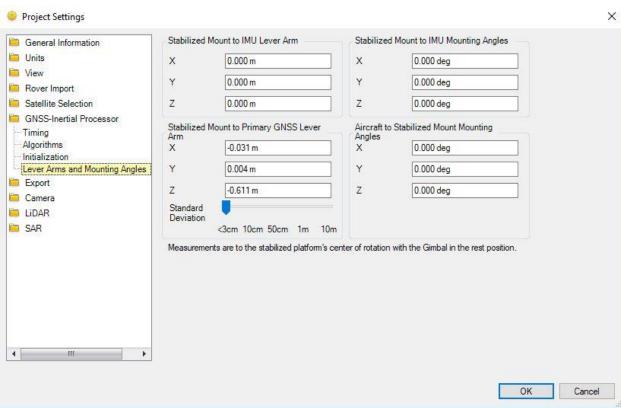


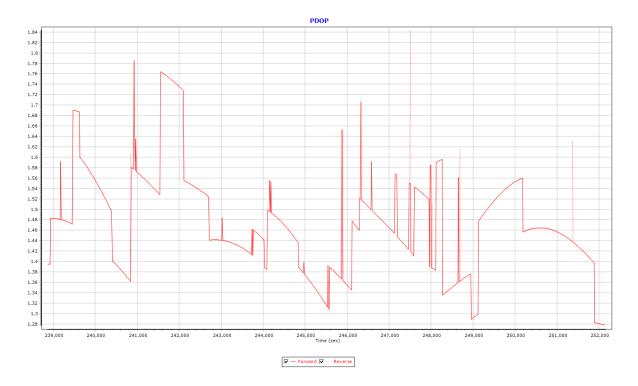


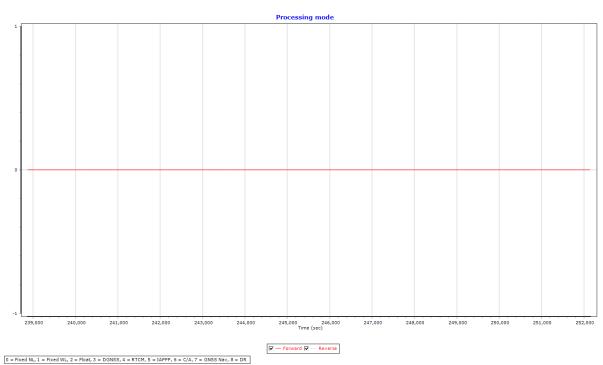


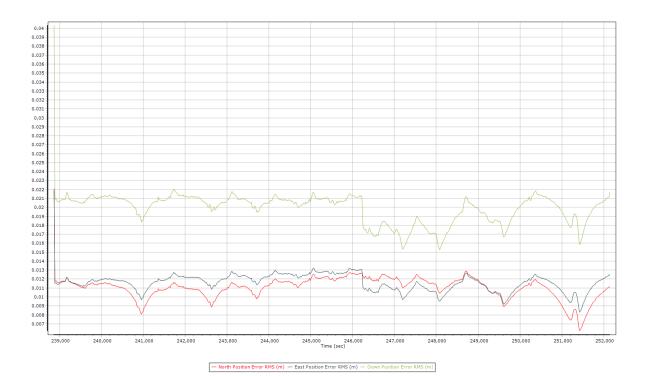


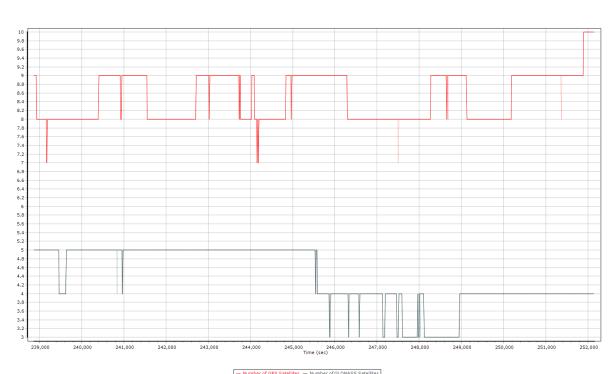


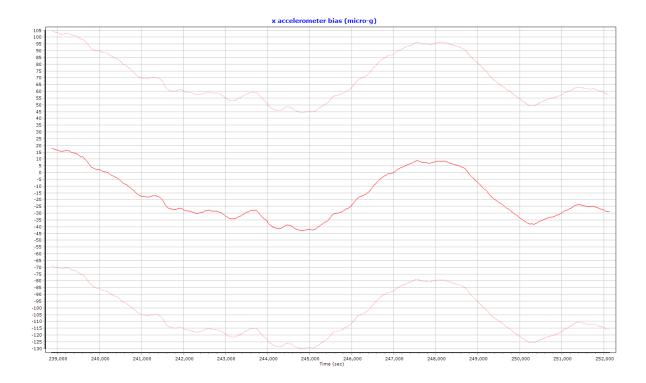


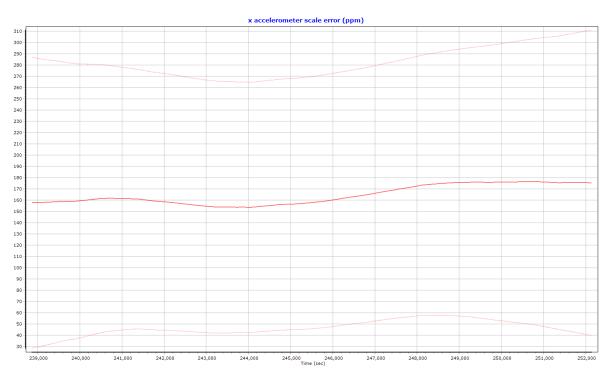


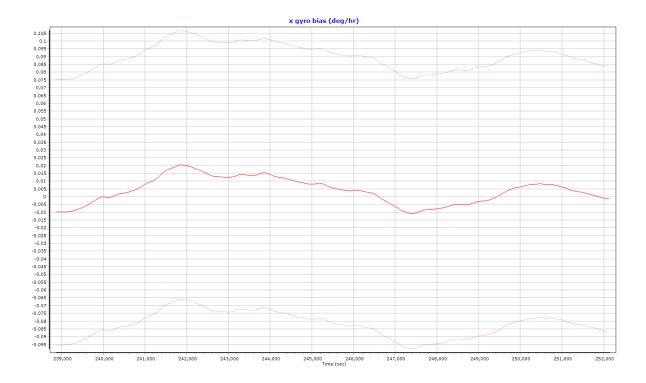


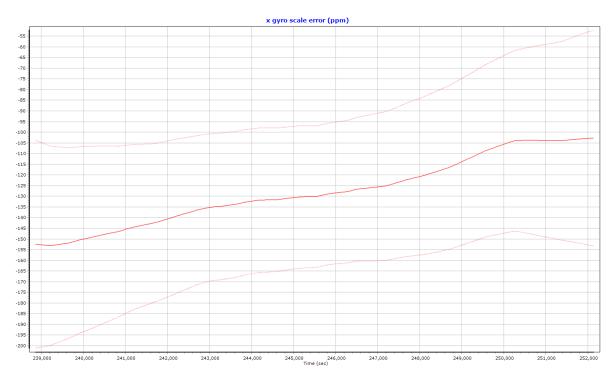


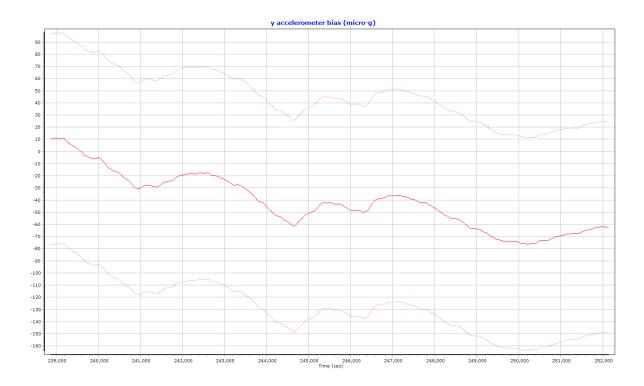


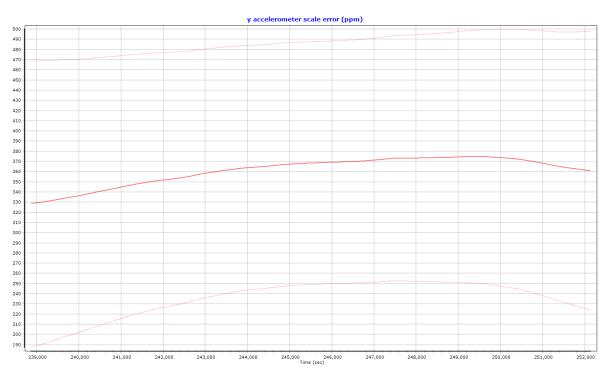


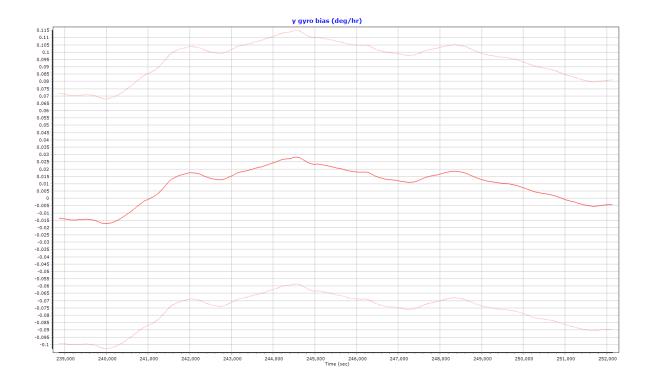


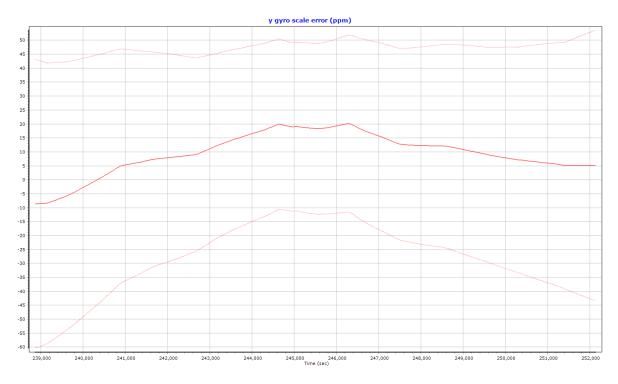


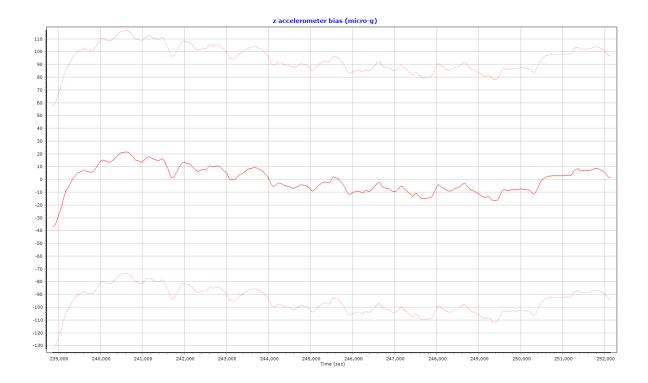


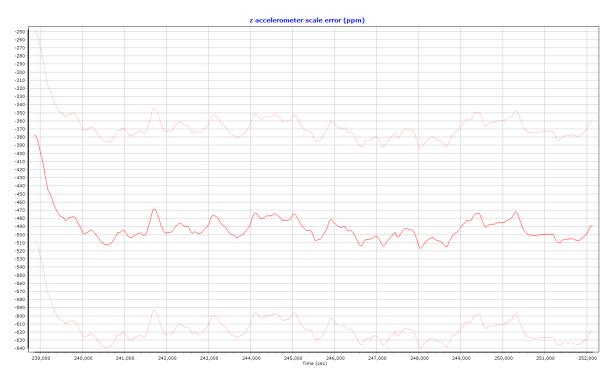


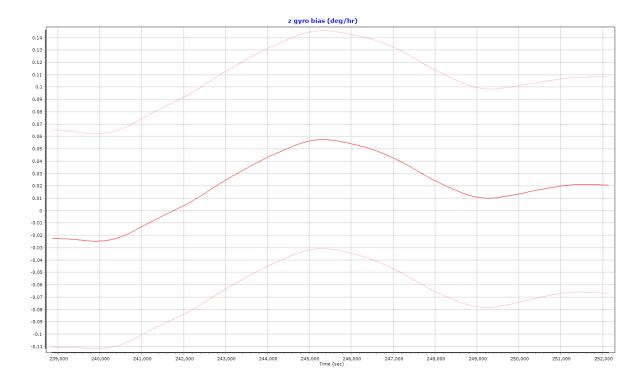


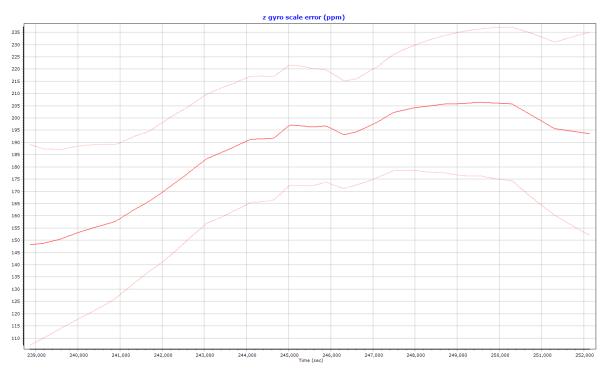




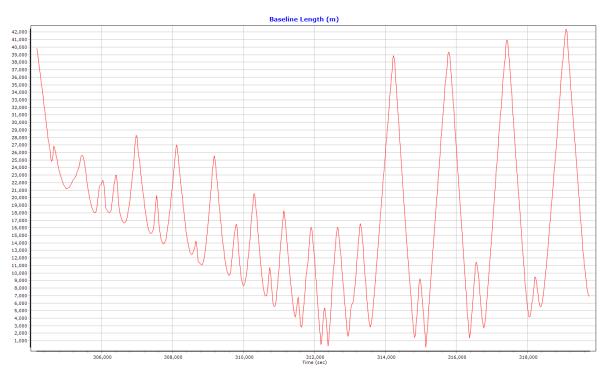


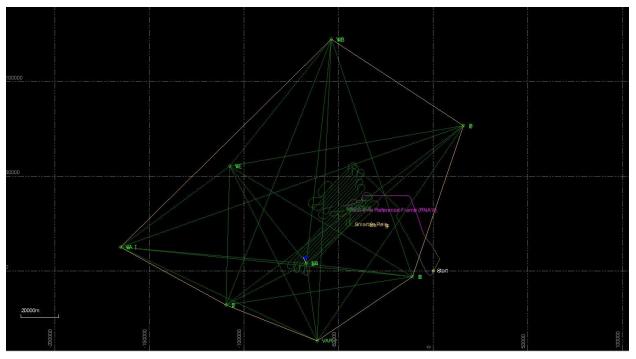


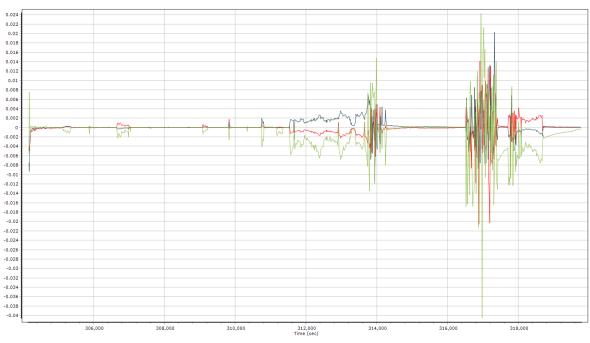




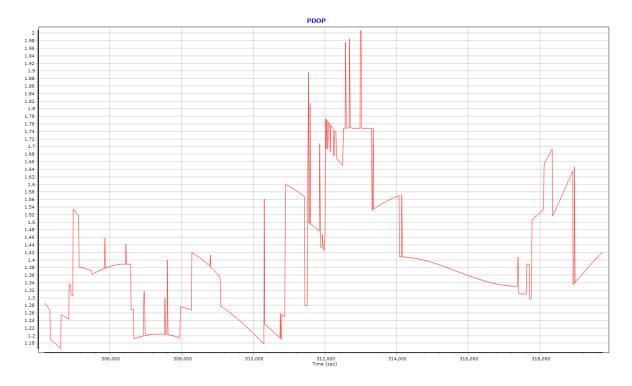


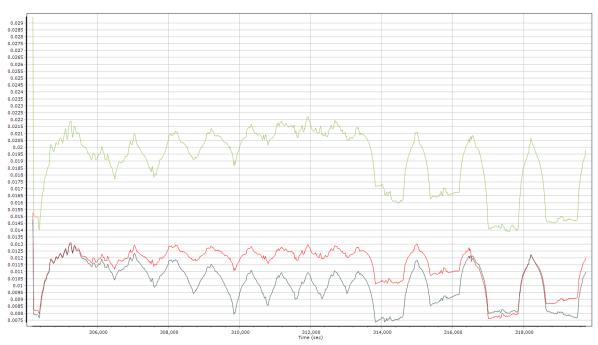


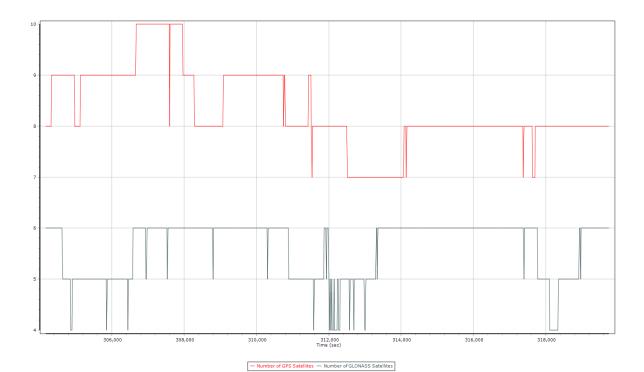


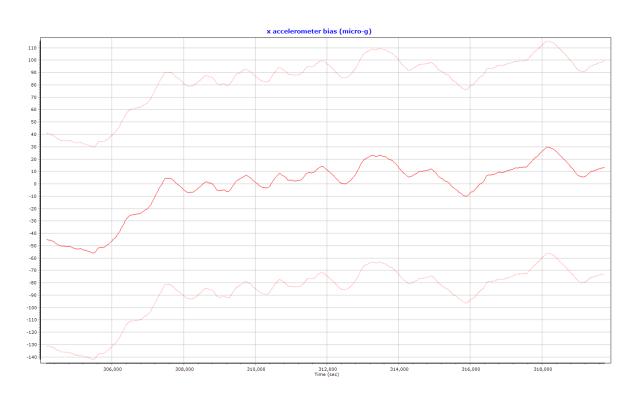


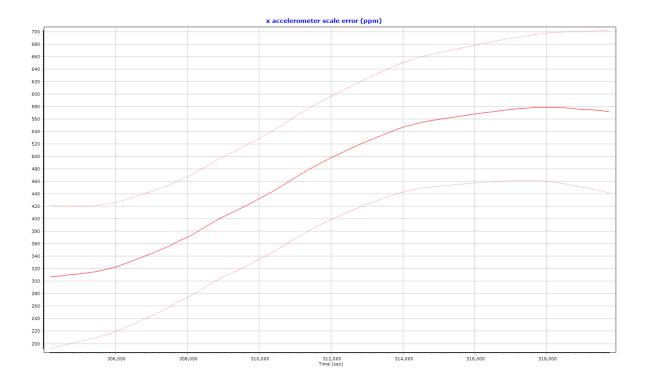
— North (m) — East (m) — Down (m) ← DR mode

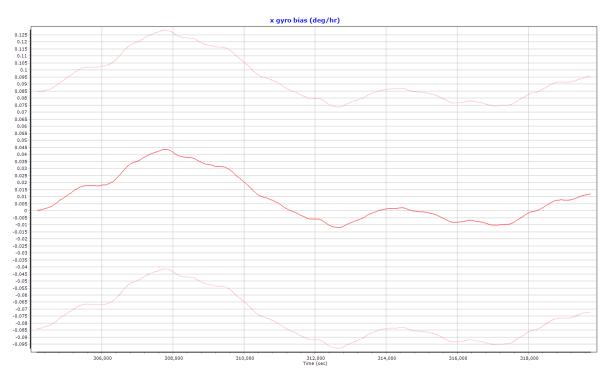


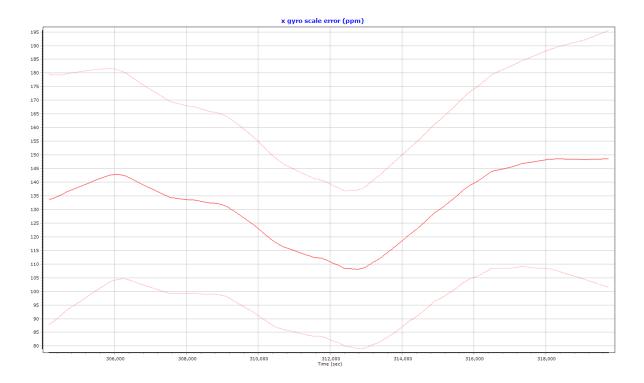


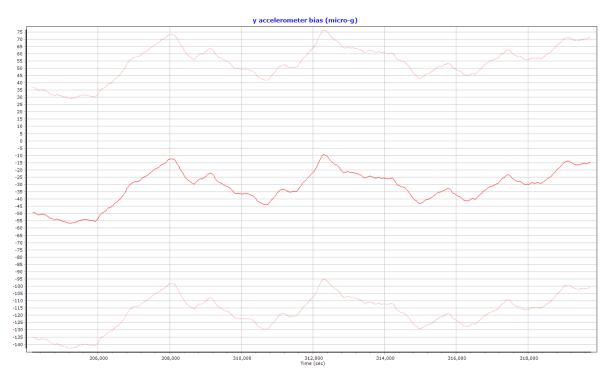


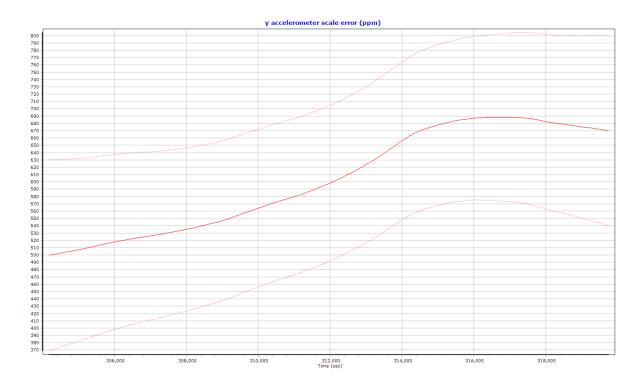


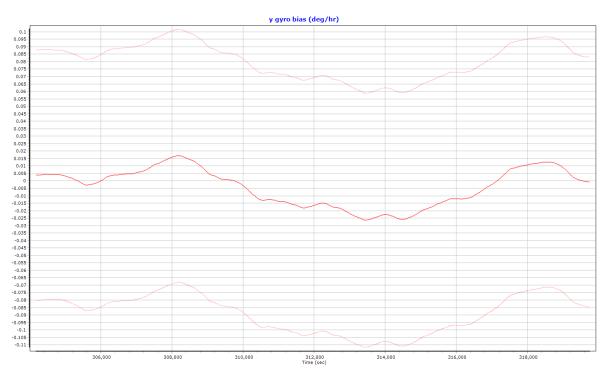


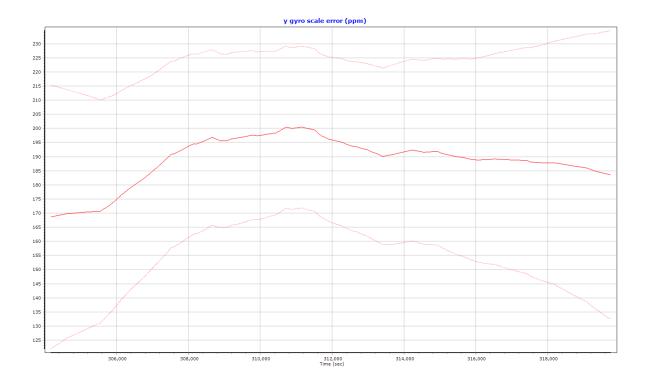


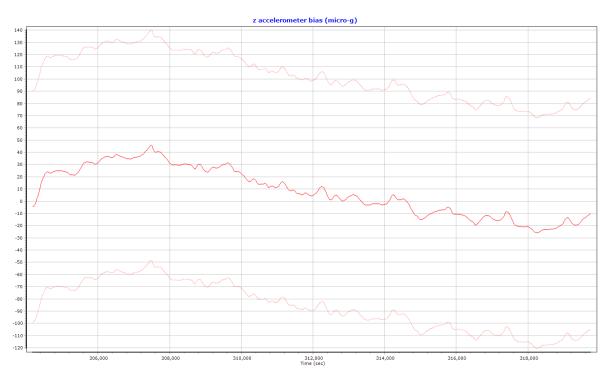


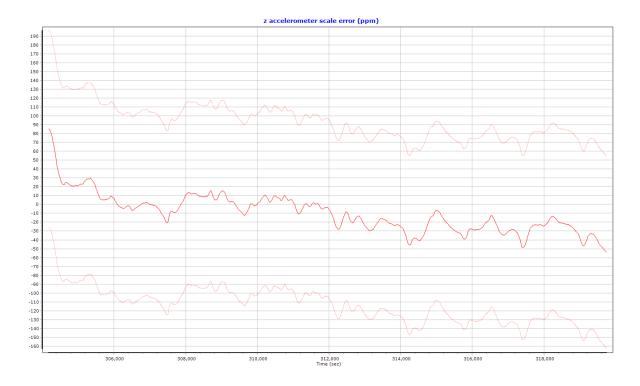


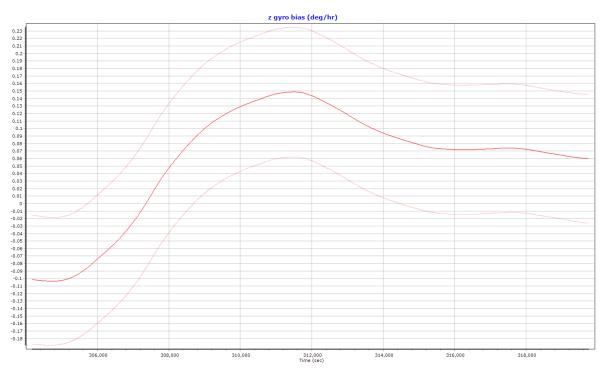


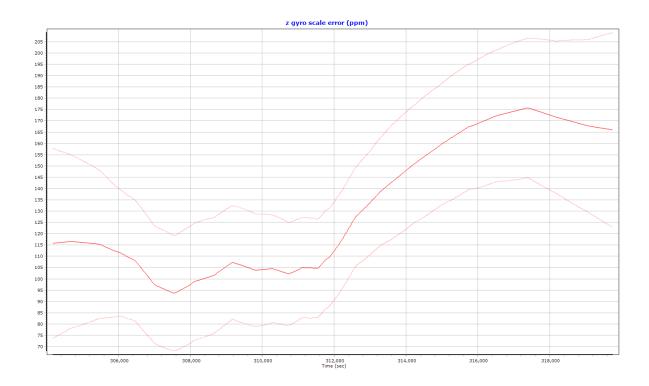




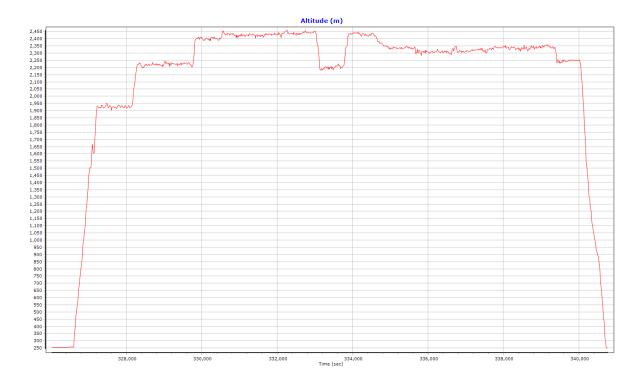


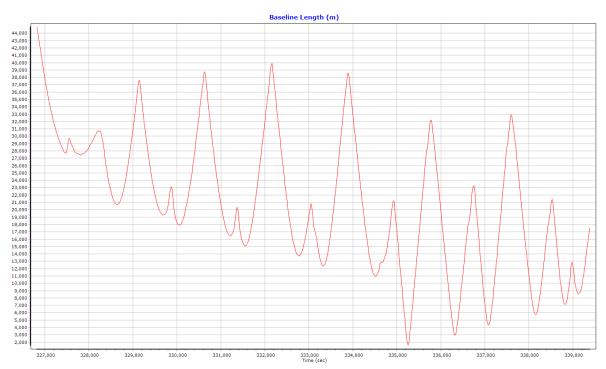


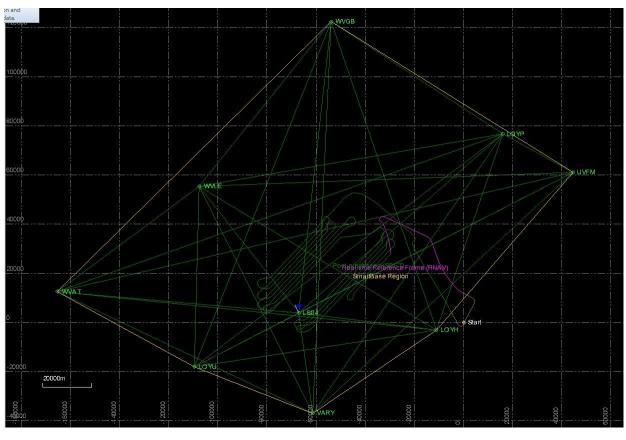




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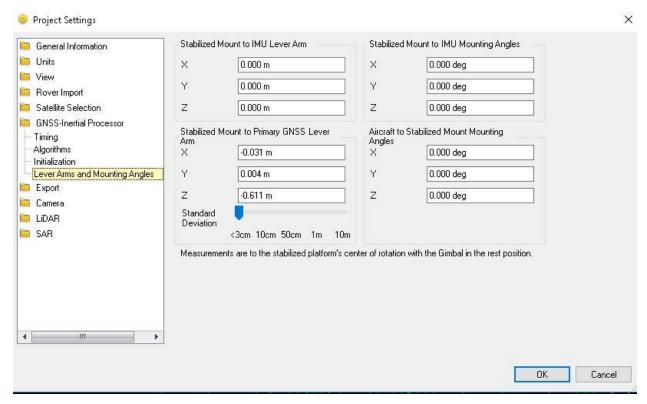




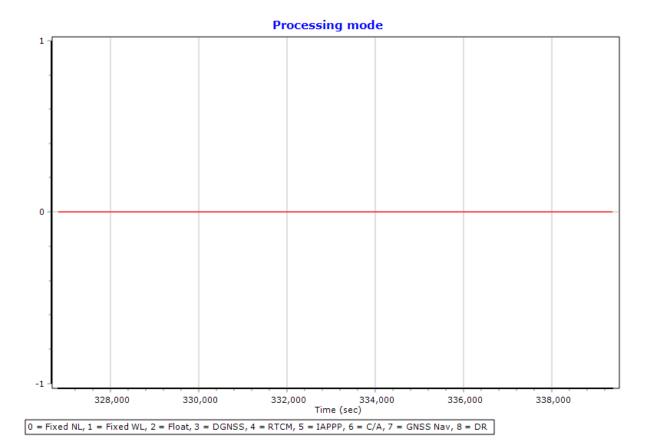


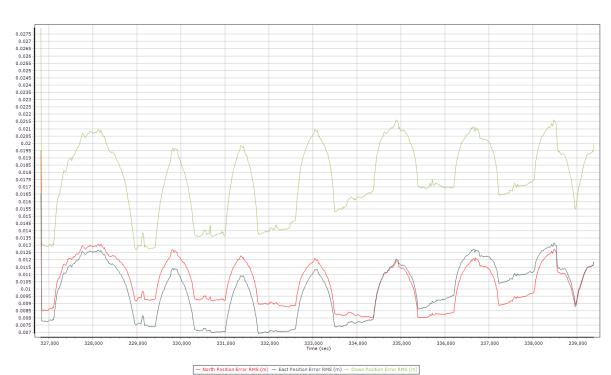


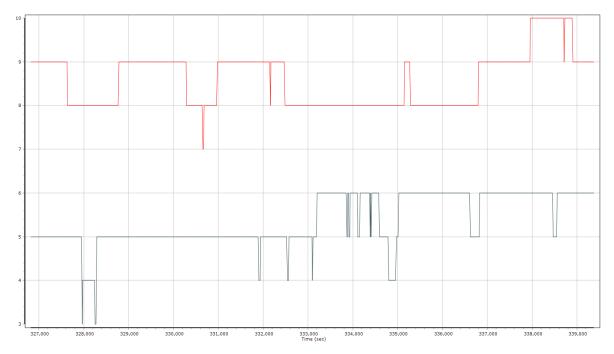
— North (m) — East (m) — Down (m) ← DR mode





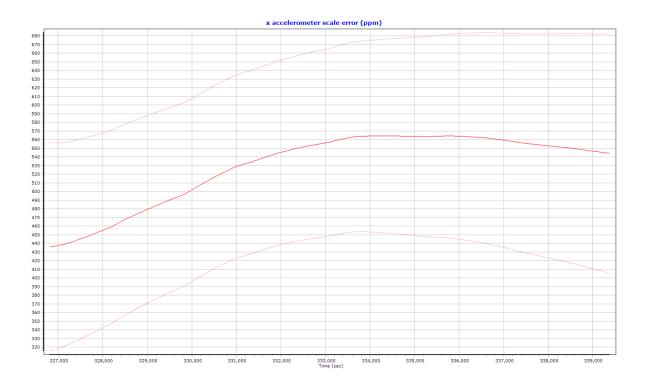


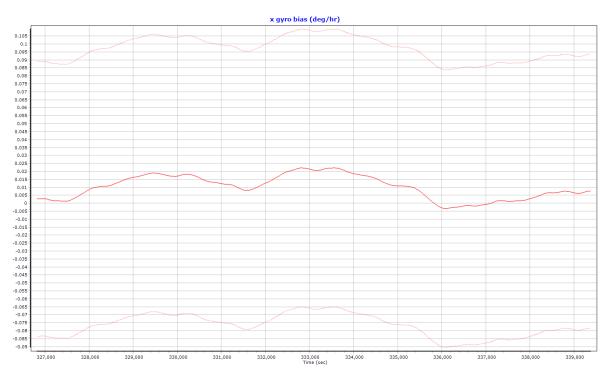


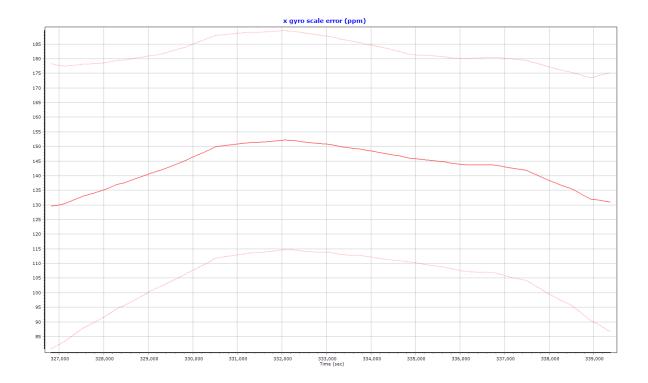


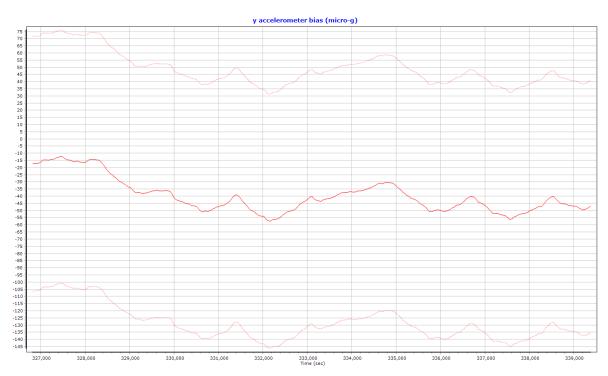


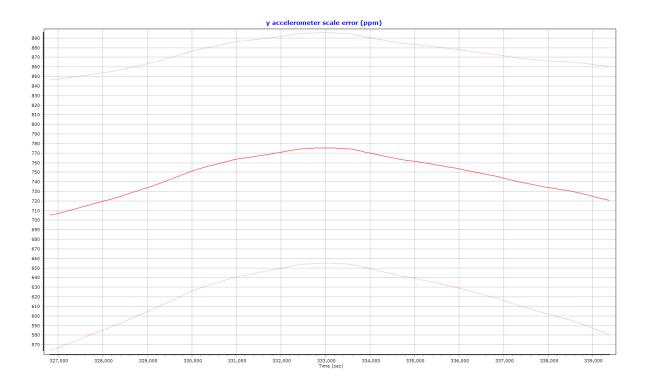


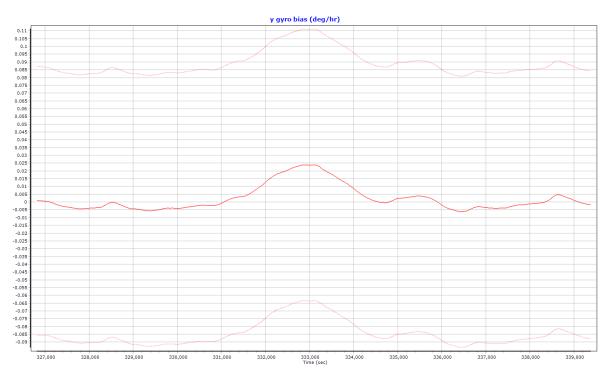


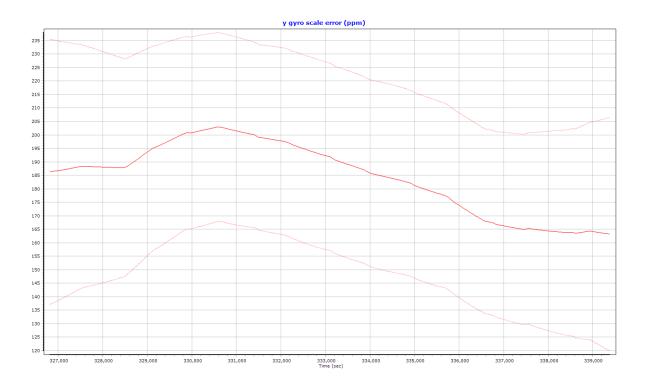




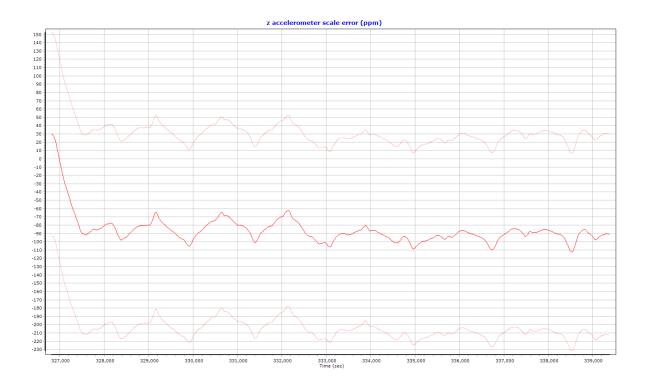


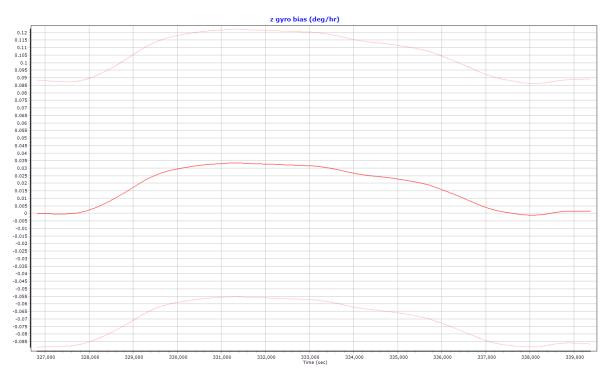


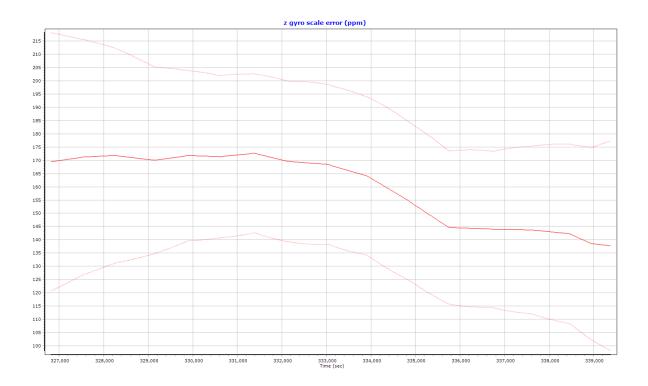




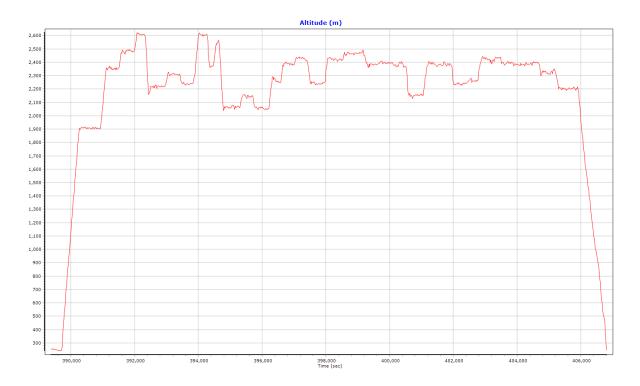


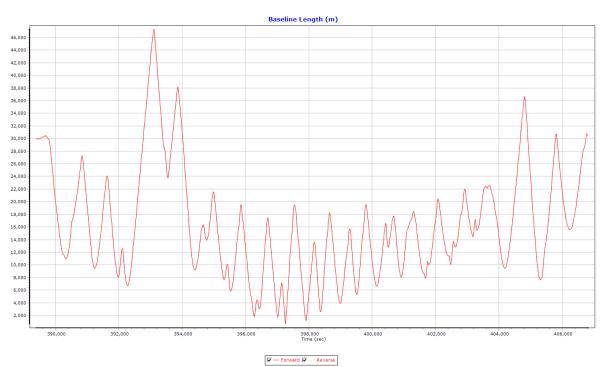


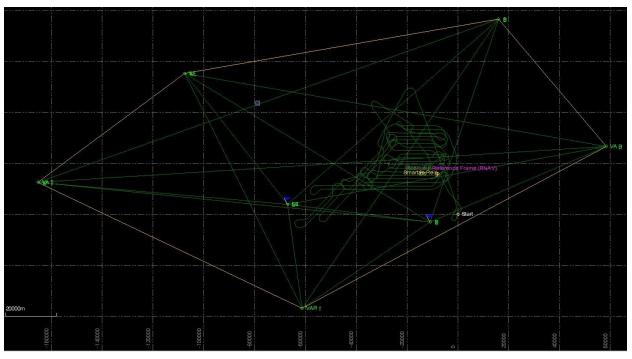




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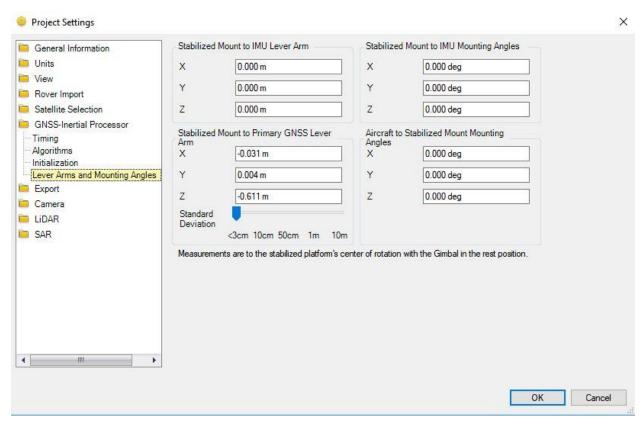


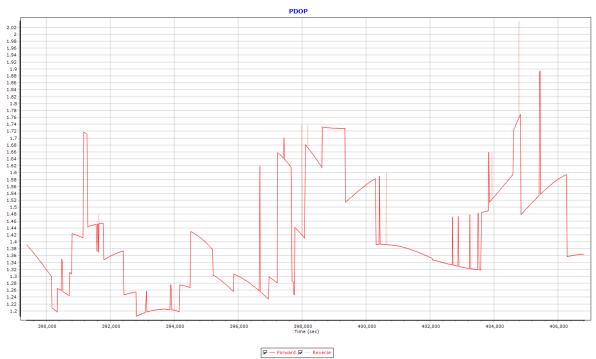


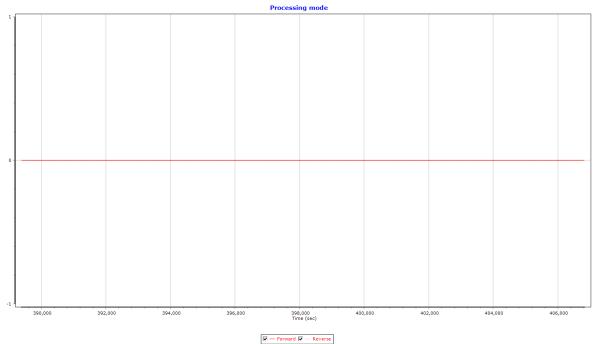




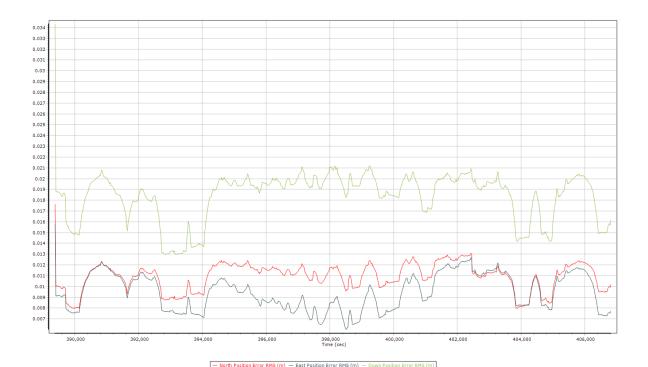
— North (m) — East (m) — Down (m) ← DR mode

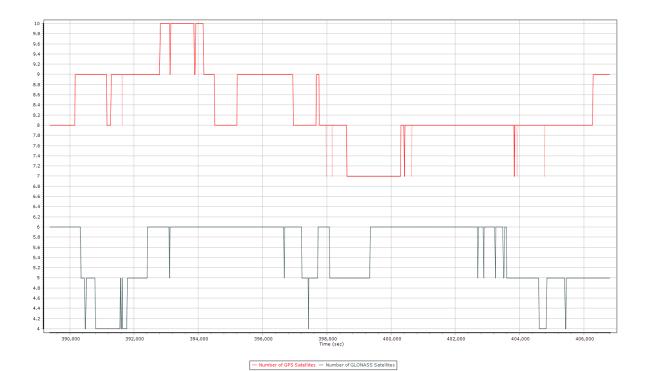


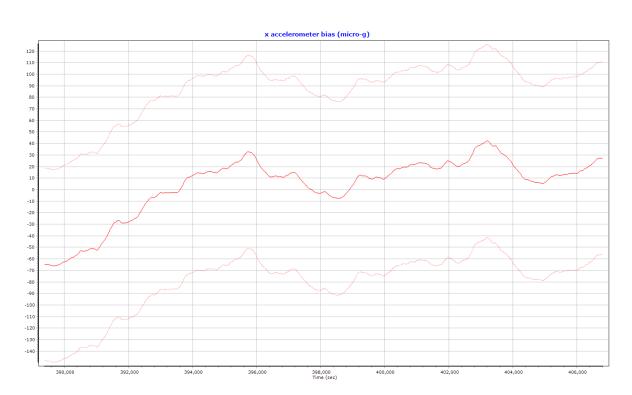


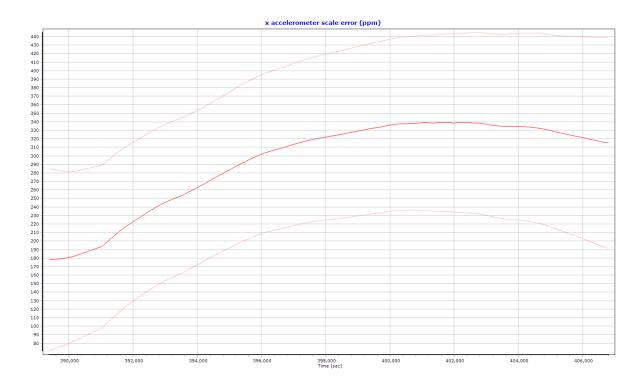


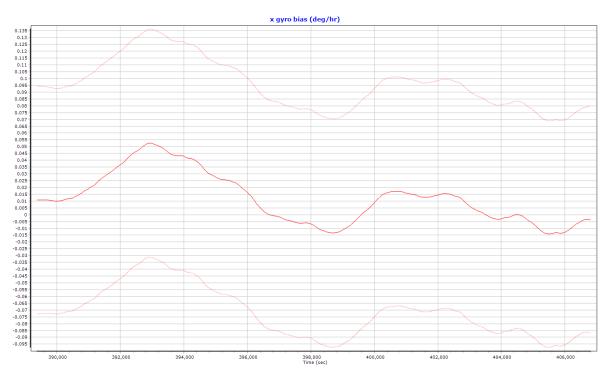
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

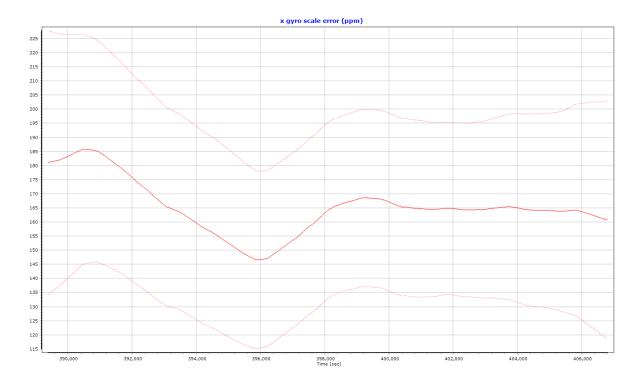


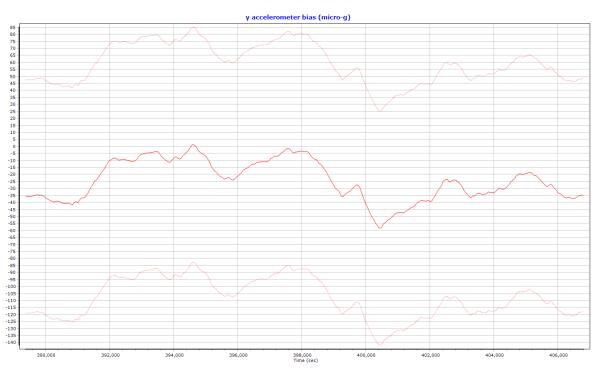


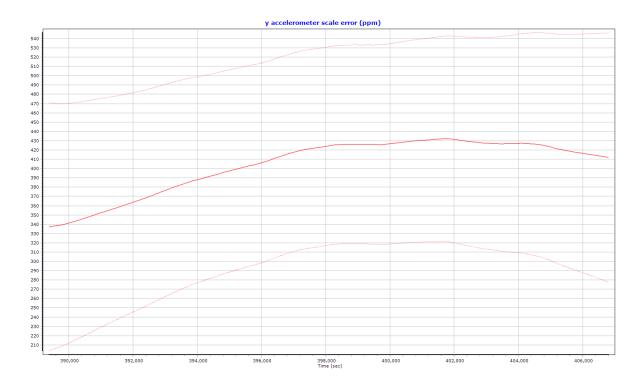


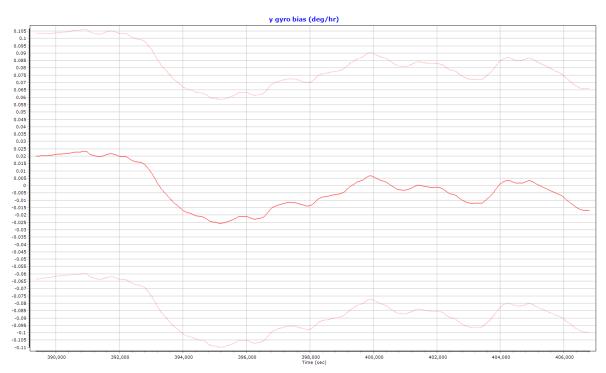


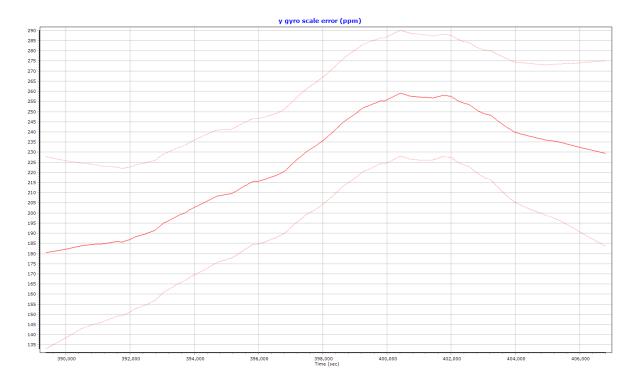


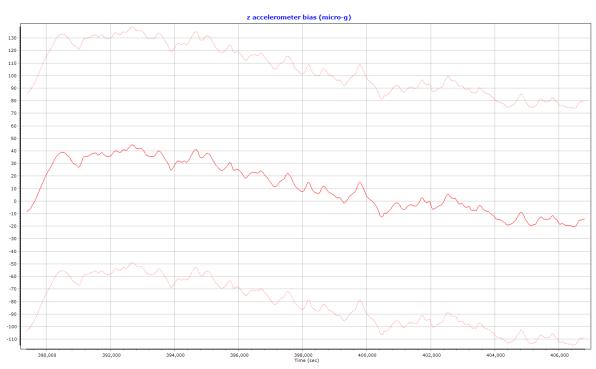


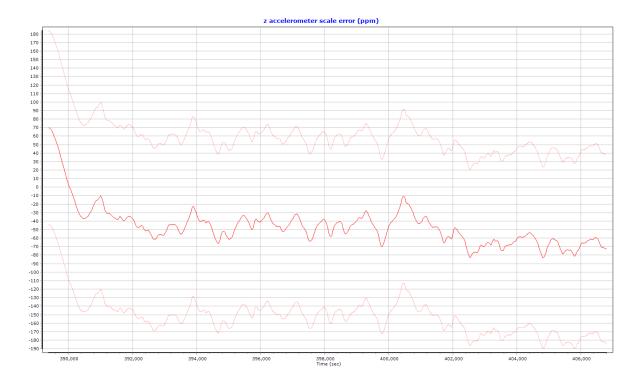


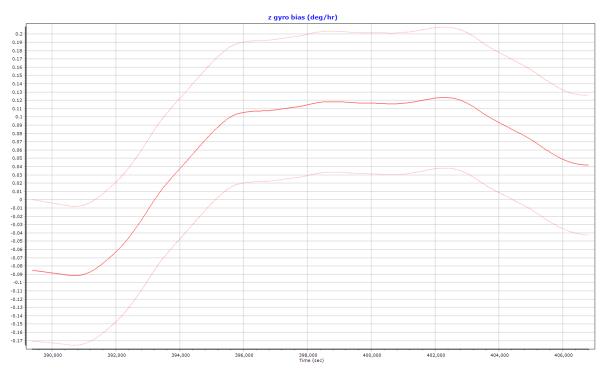


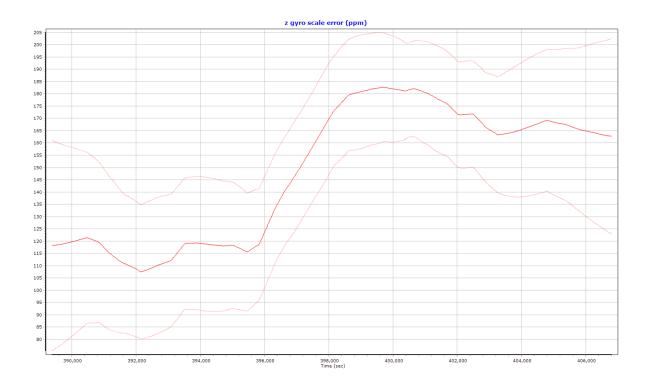




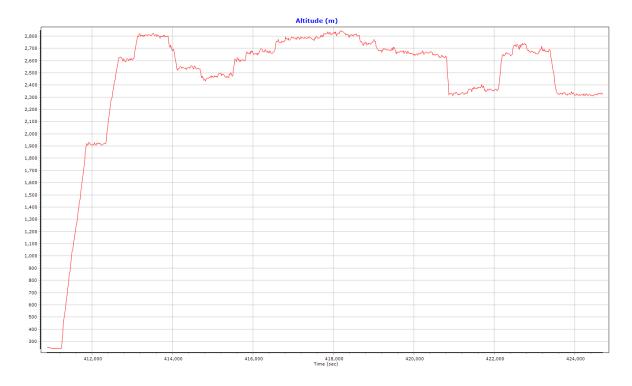


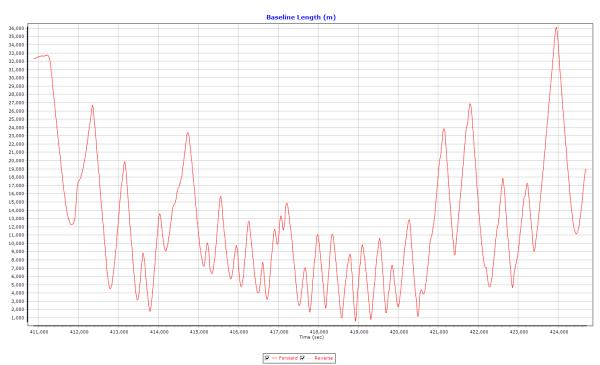


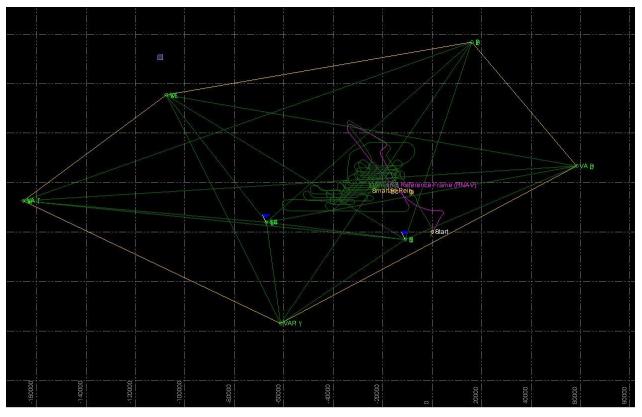


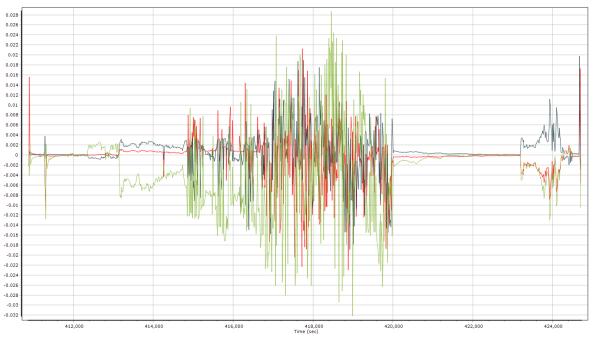


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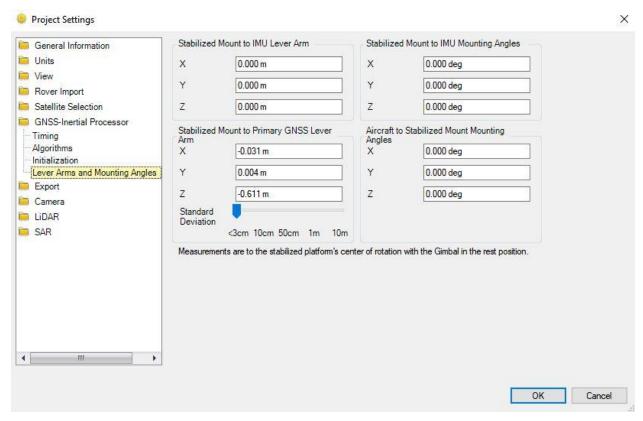


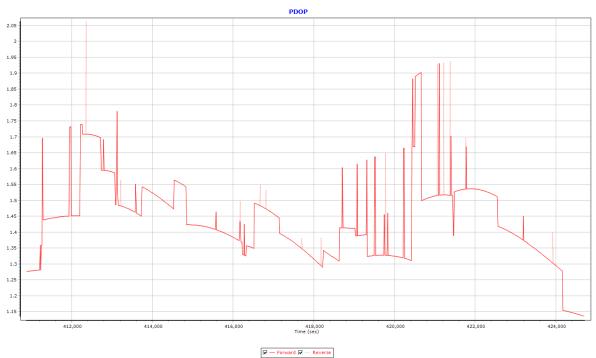


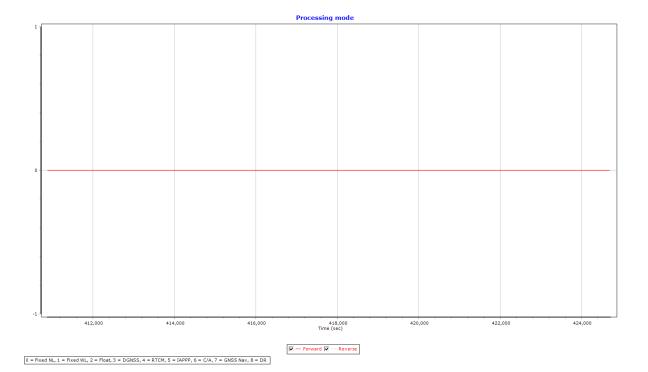




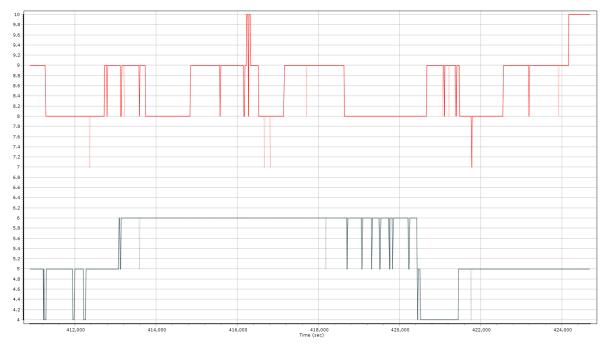
— North (m) — East (m) — Down (m) → DR mode



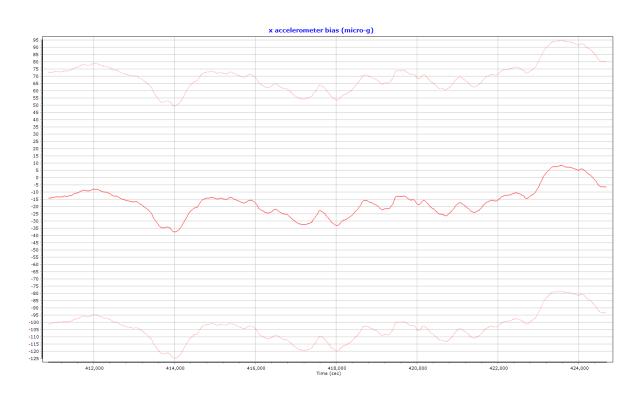


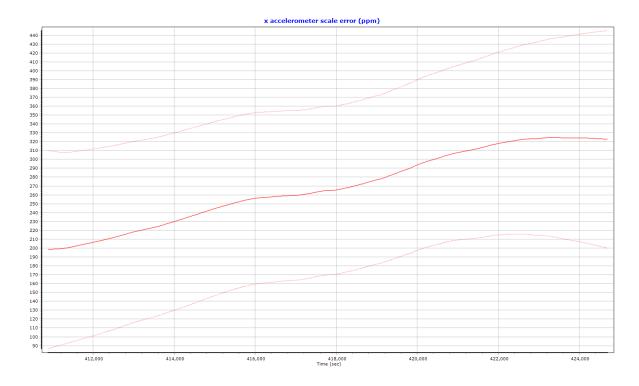


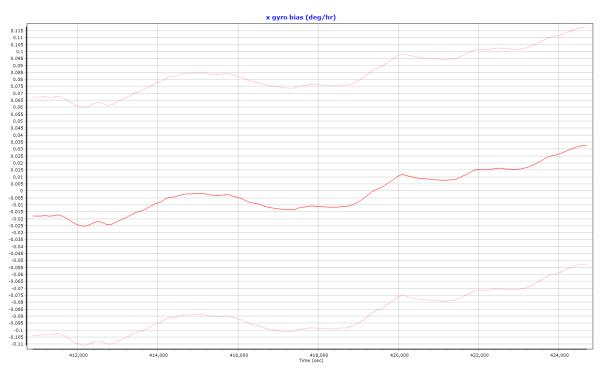
0.035 0.033 0.032 0.03 0.029 0.028 0.027 0.026 0.024 0.023 0.021 0.019 0.018 0.016 0.015 0.013 0.012 0.01 0.008 416,000 422,000 412,000 414,000 418,000 Time (sec)

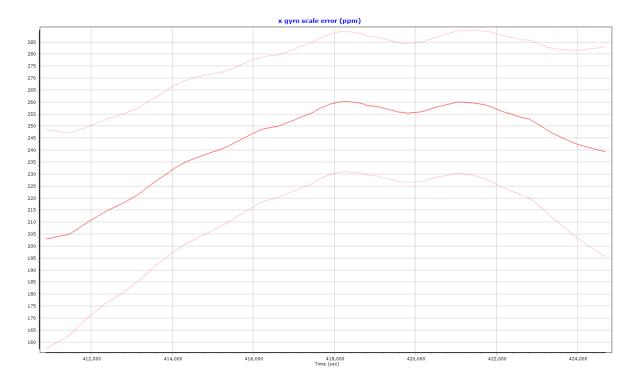


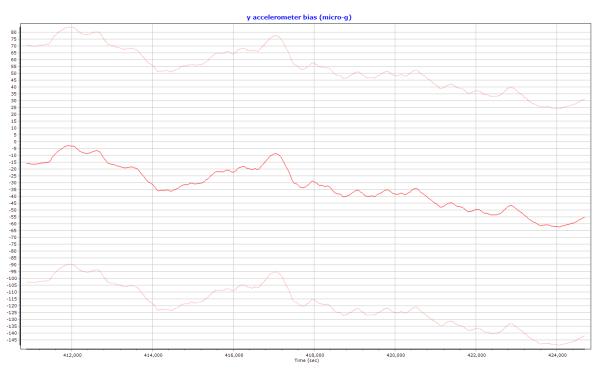


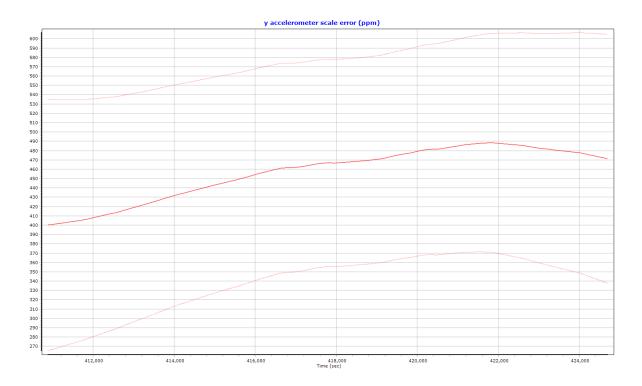


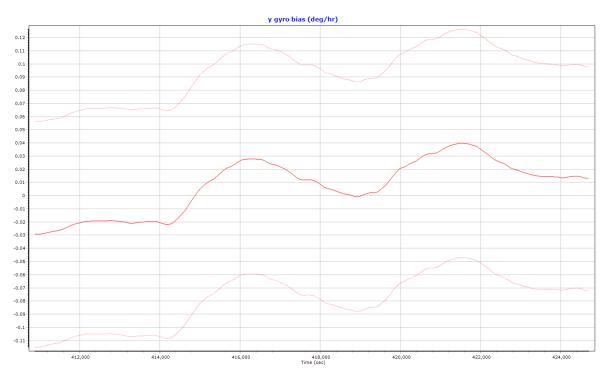


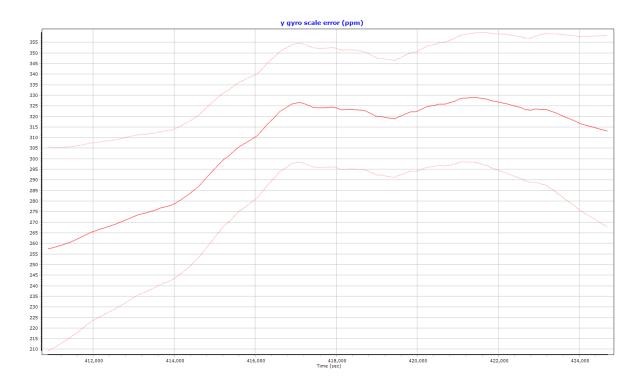


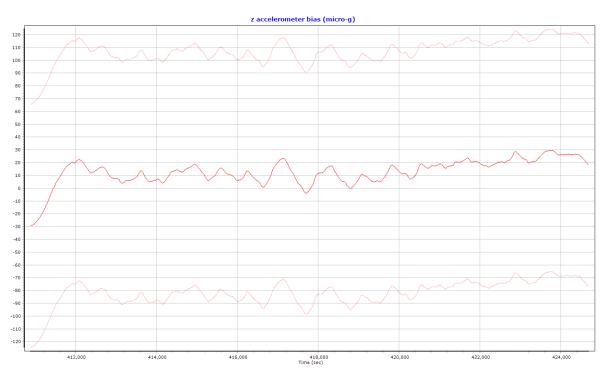


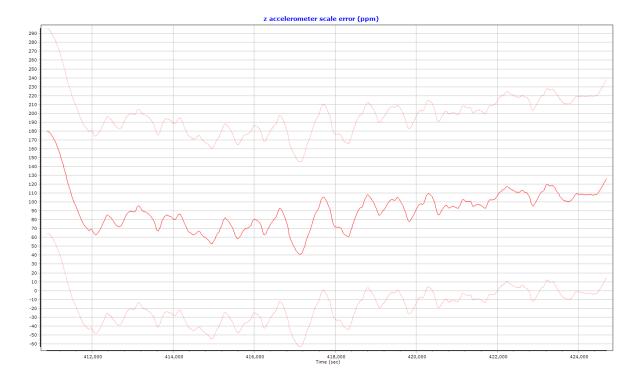


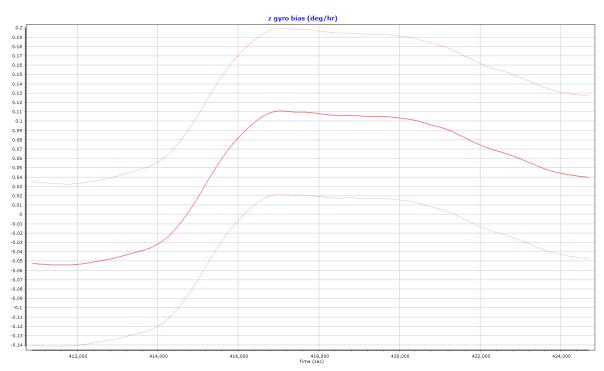


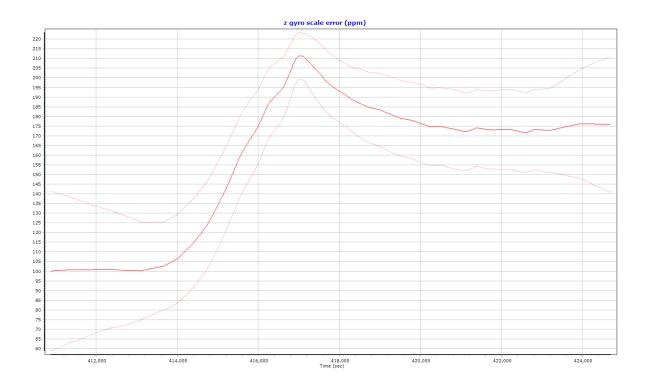




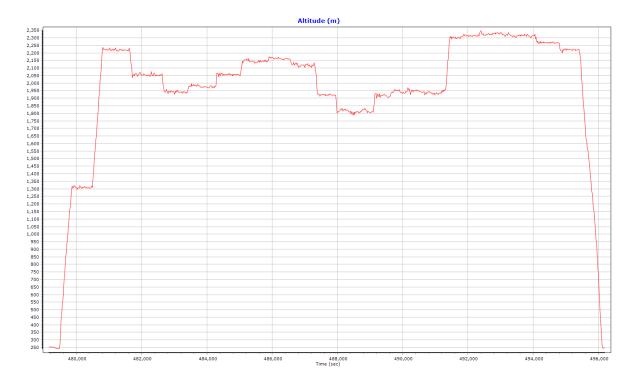


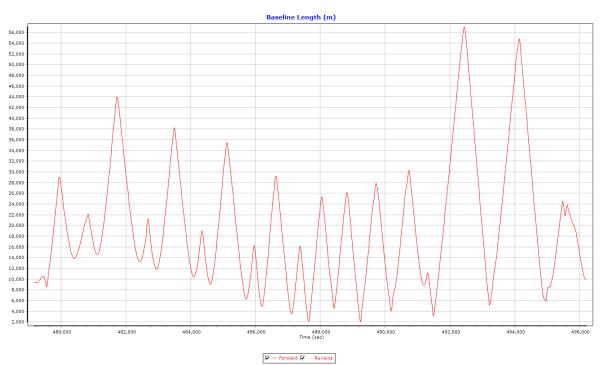


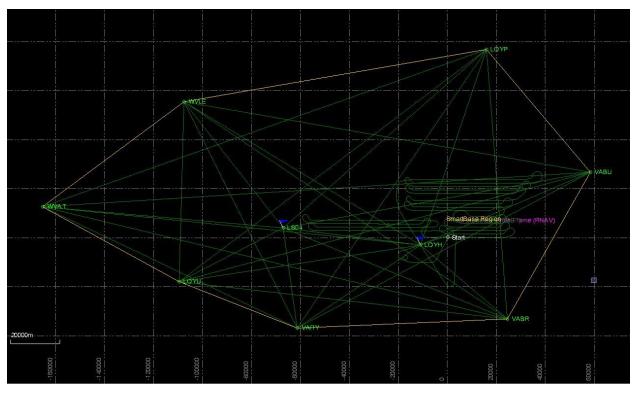




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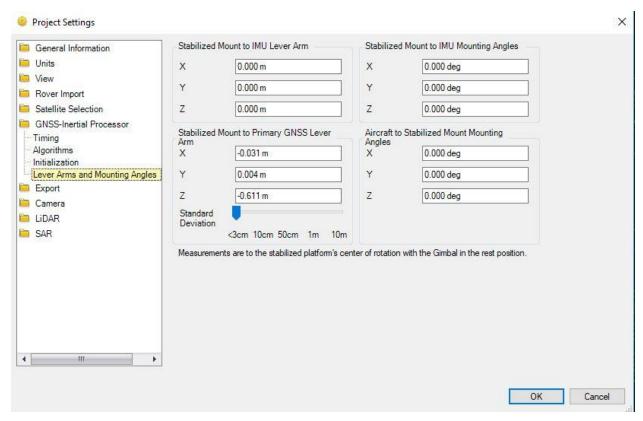


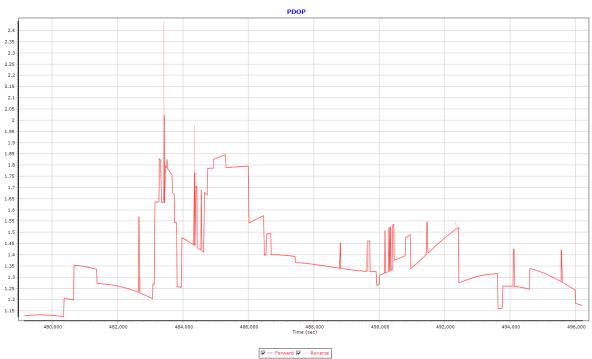


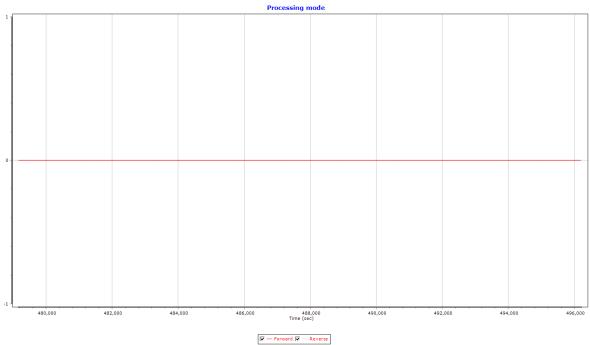




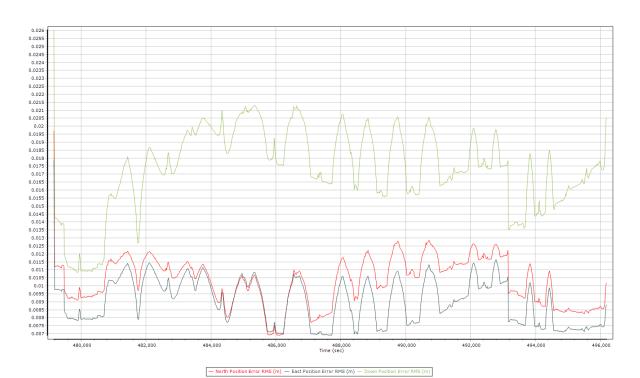
— North (m) — East (m) — Down (m) → DR mode

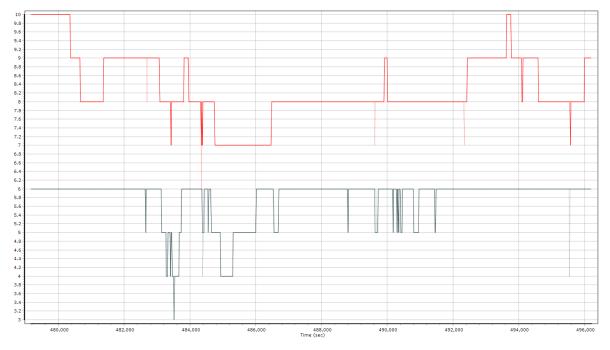




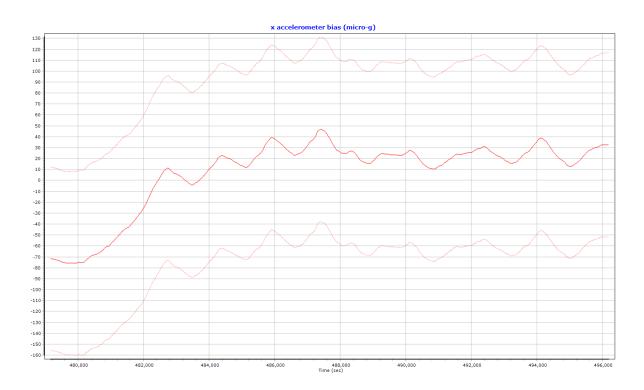


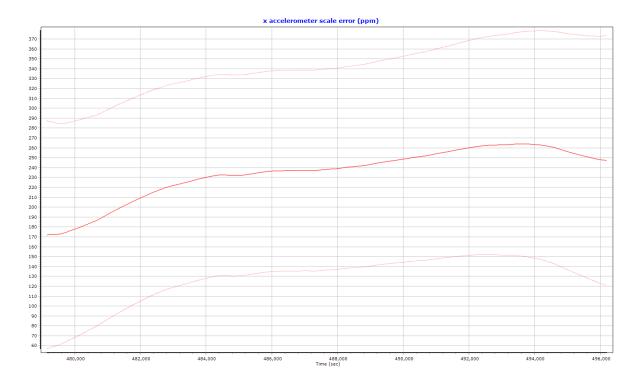
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

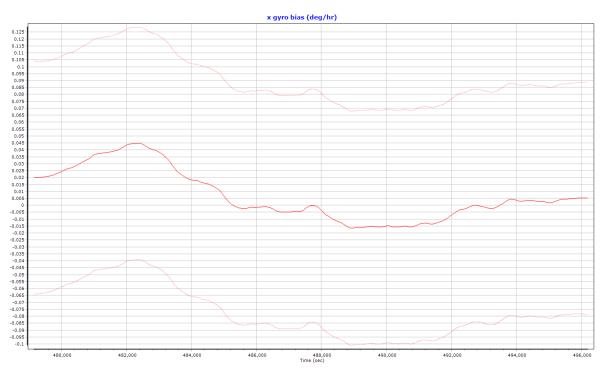


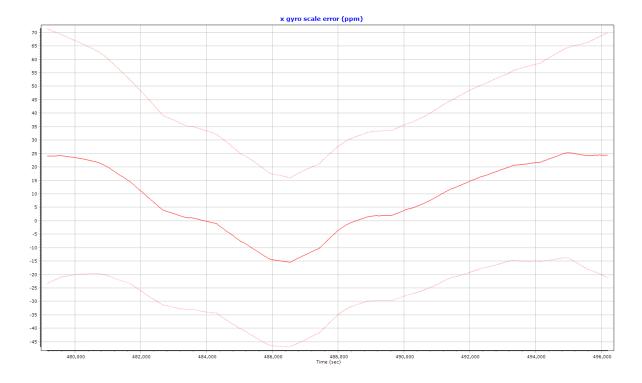


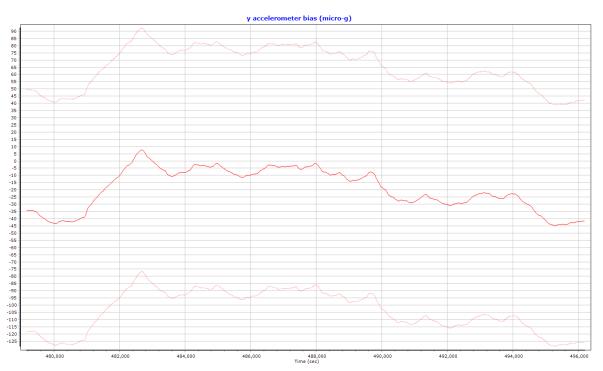


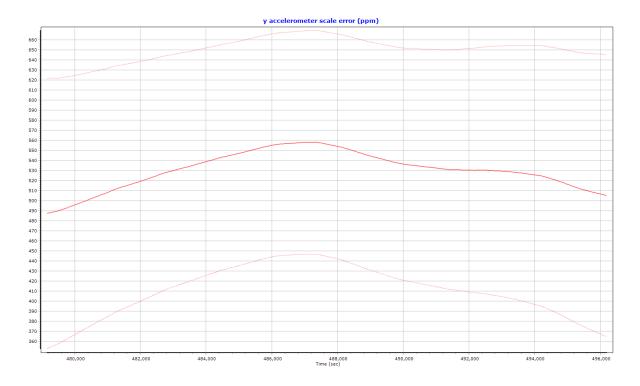


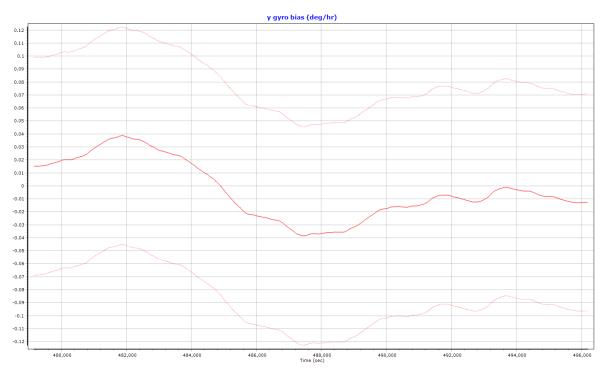


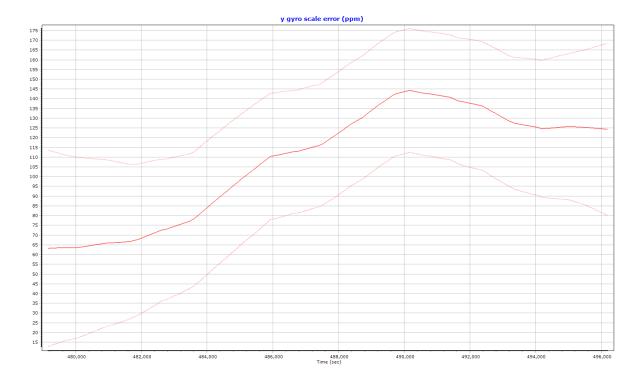


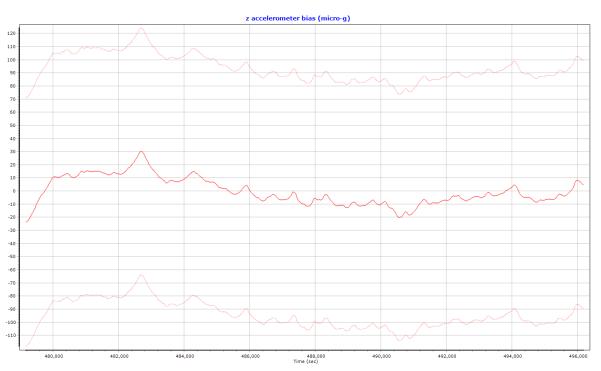


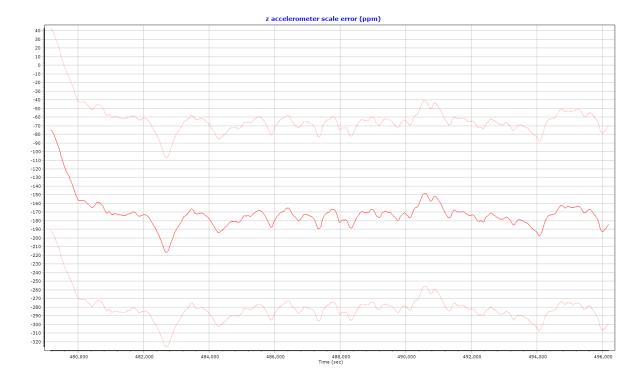


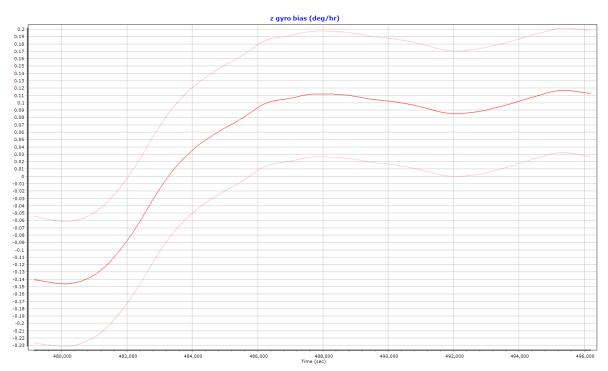


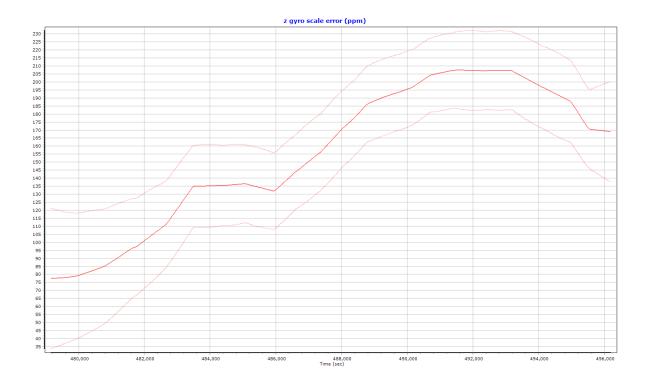




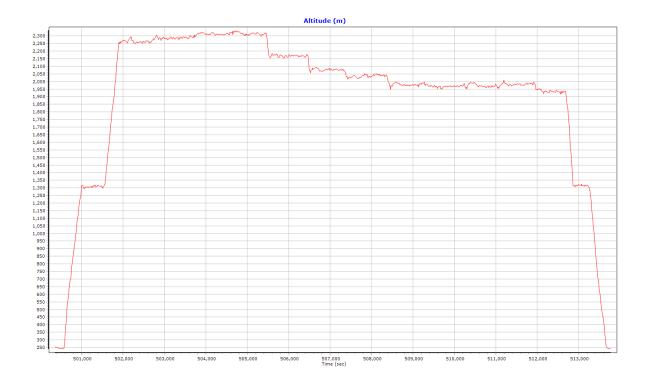


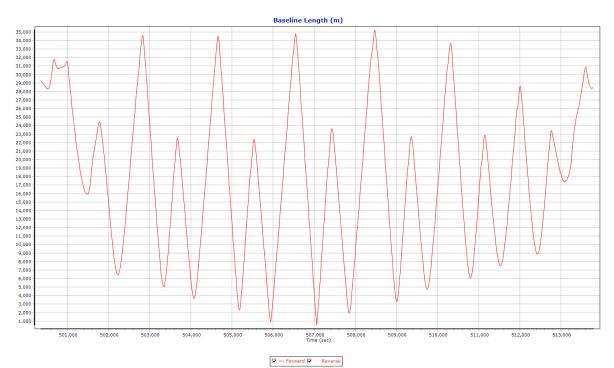


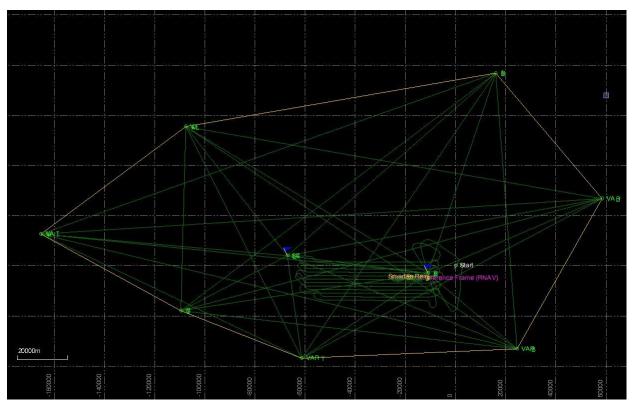




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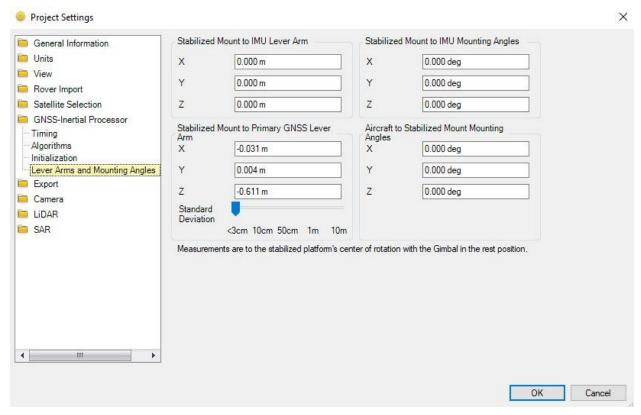


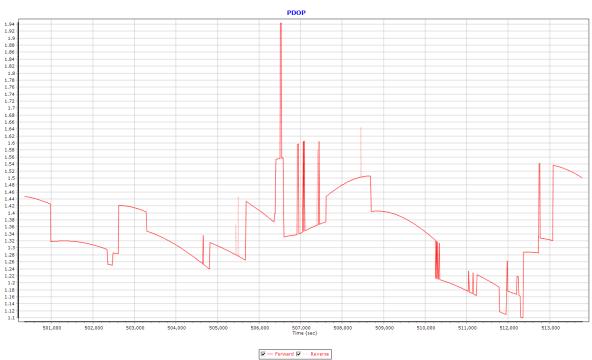


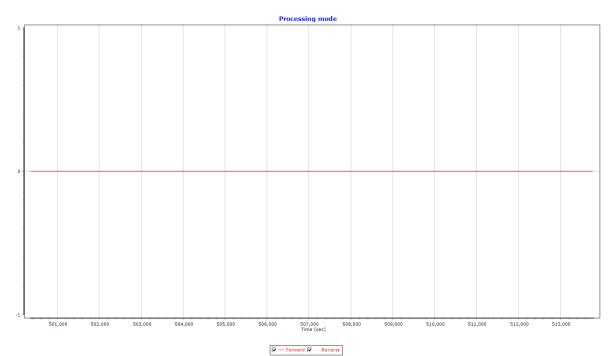




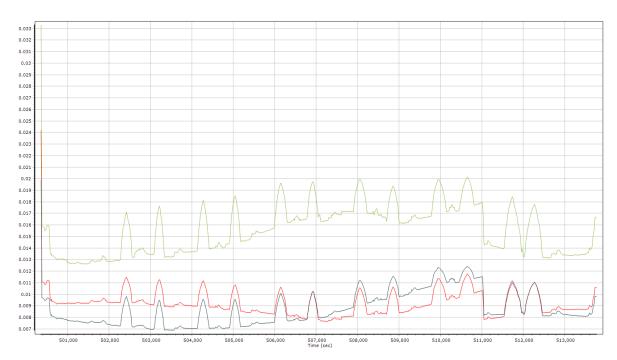
— North (m) — East (m) — Down (m) → DR mode



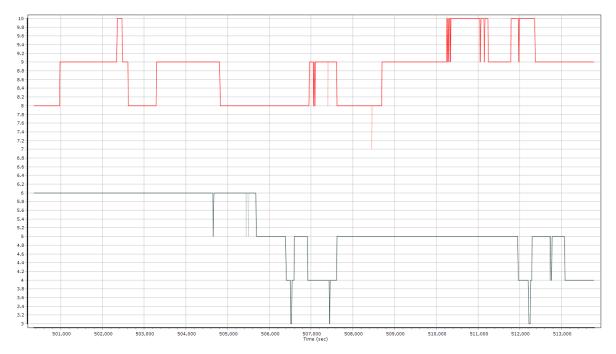




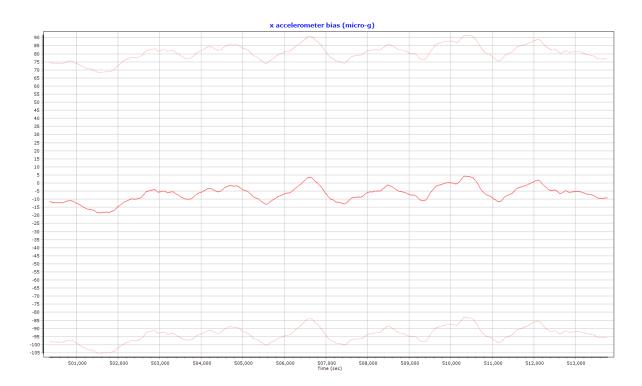
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

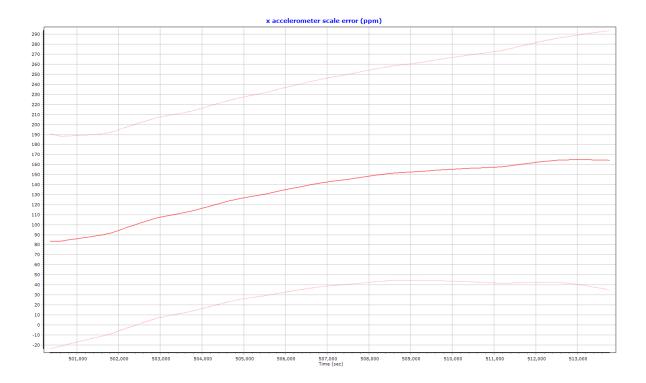


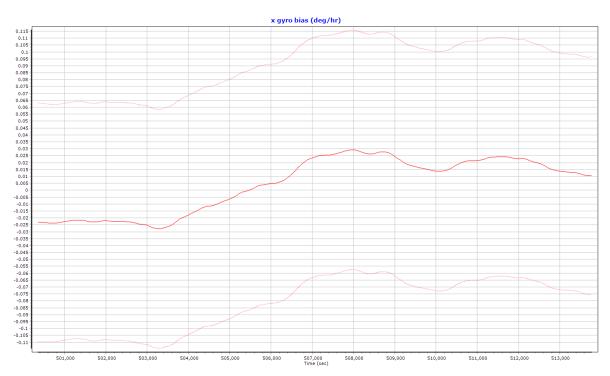
 $\boxed{ - \text{North Position Error RMS (m)} - \text{East Position Error RMS (m)} - \text{Down Position Error RMS (m)} }$

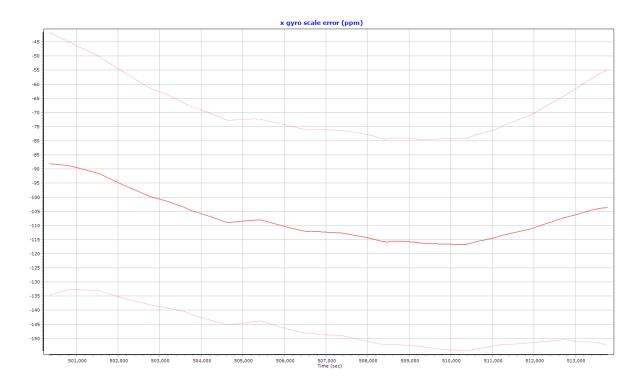


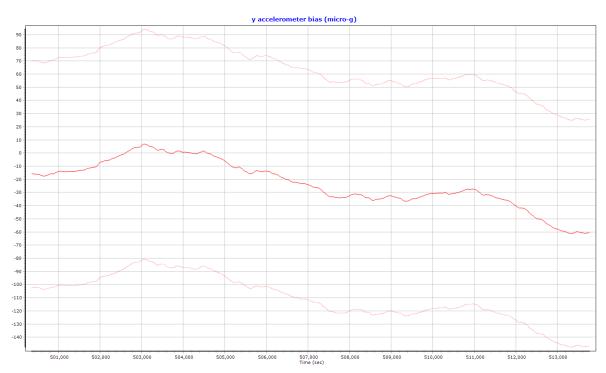
— Number of GPS Satellites — Number of GLONASS Satellites

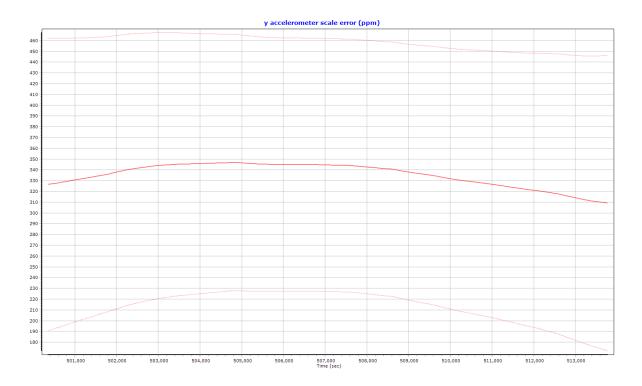


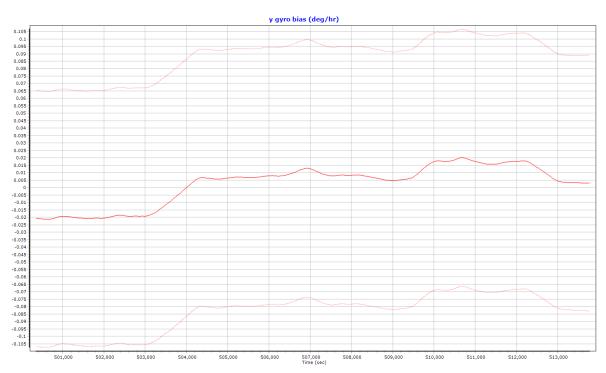


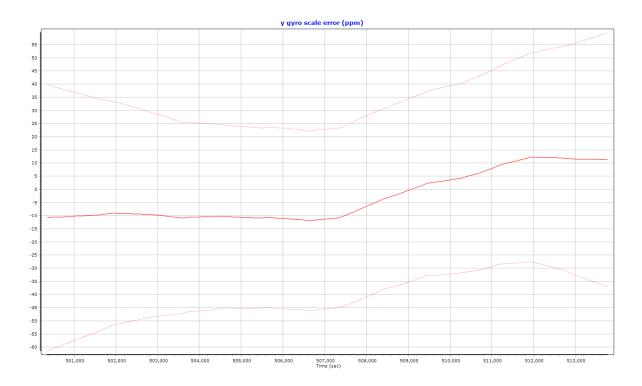


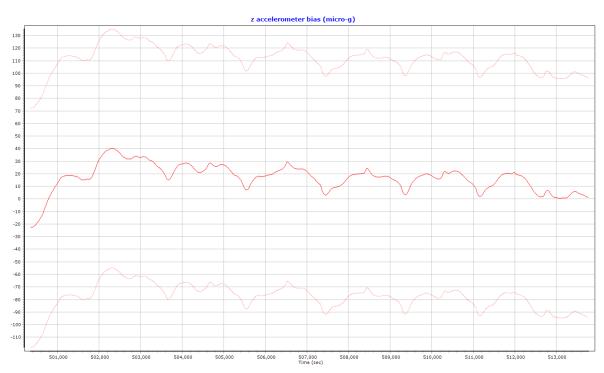


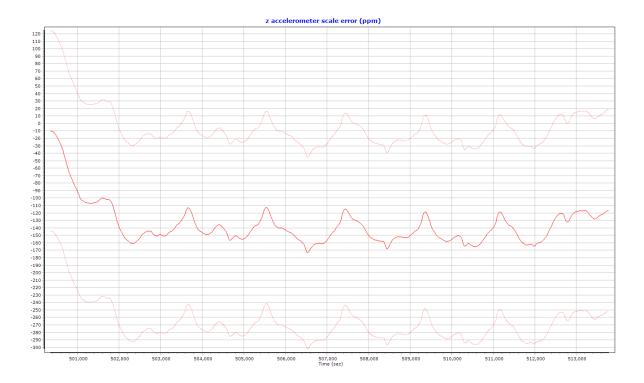


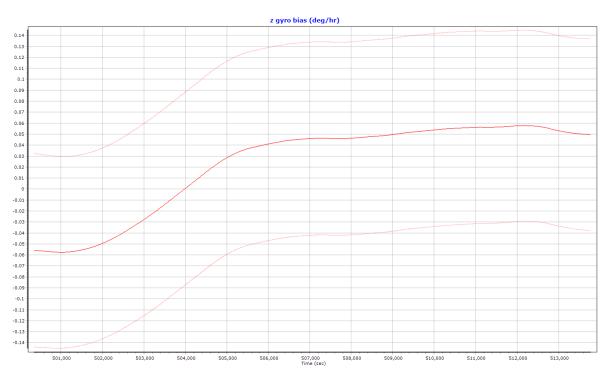


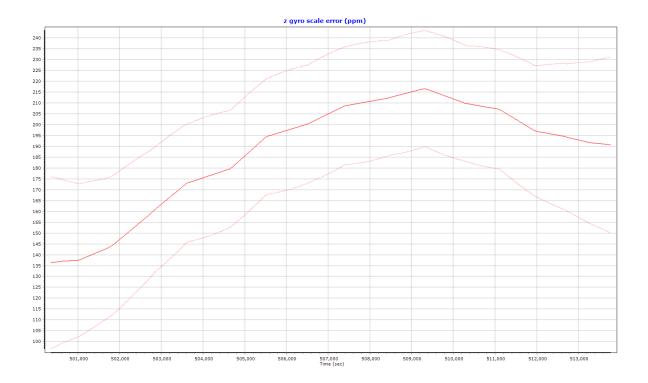




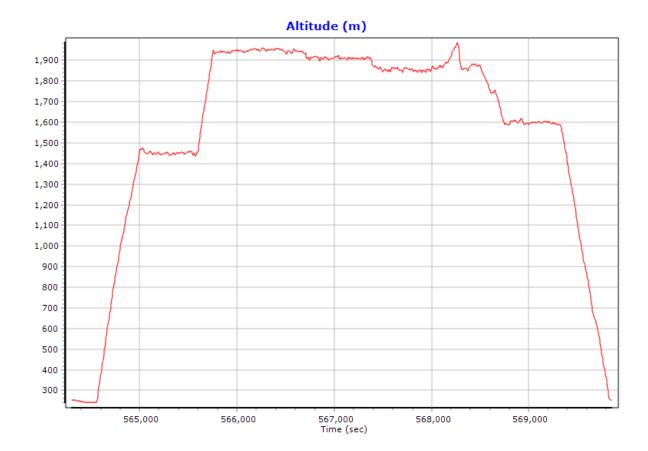




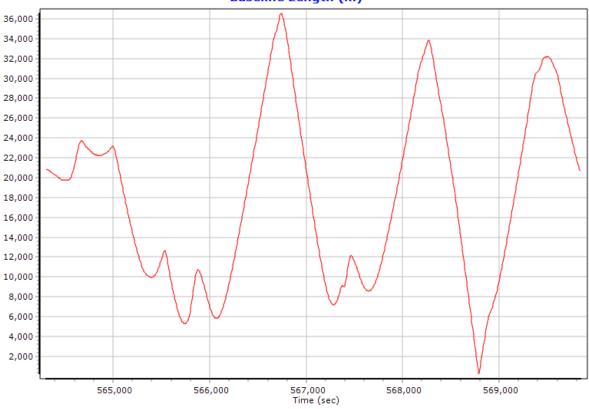


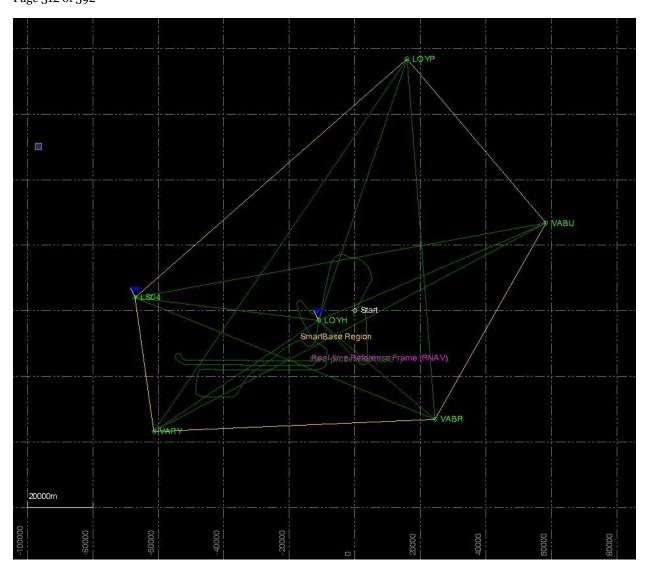


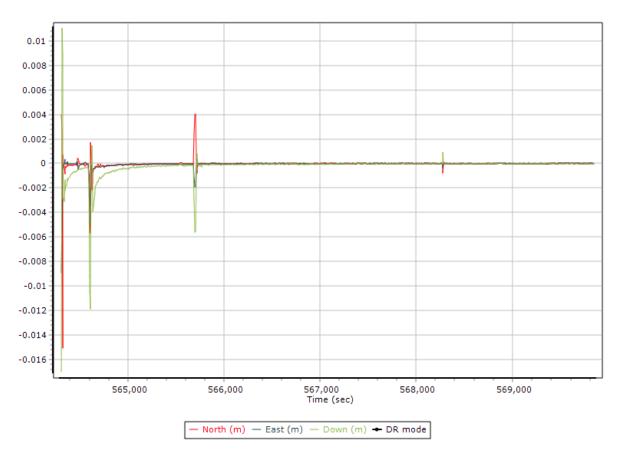
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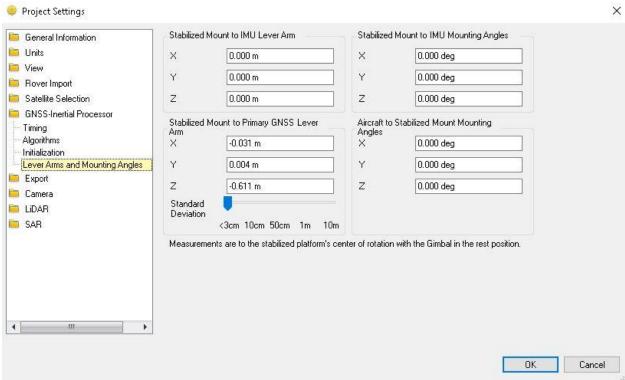


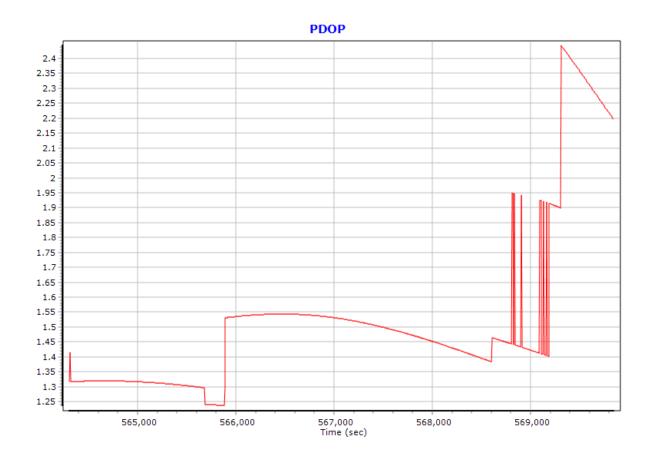


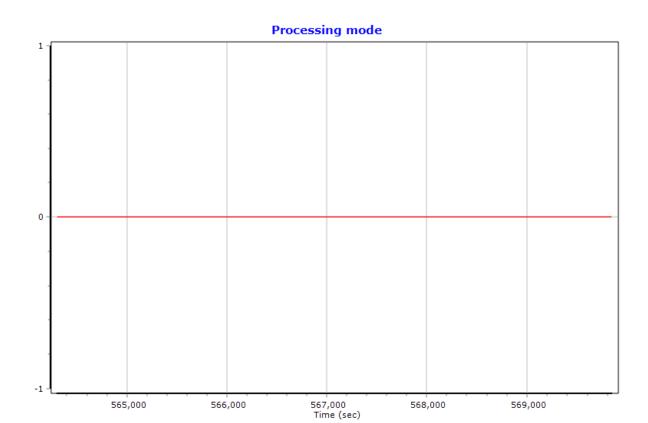




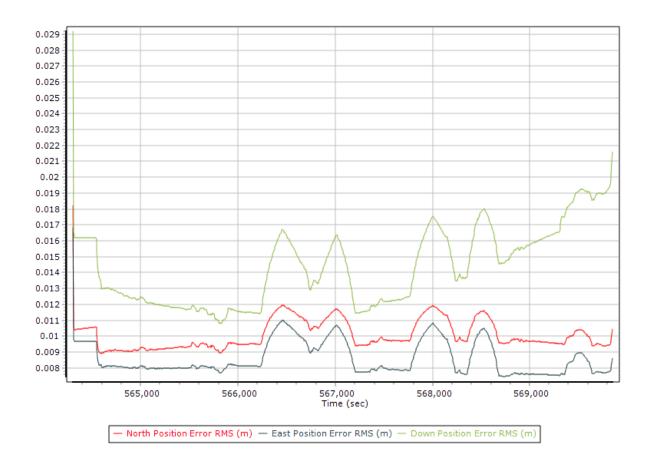


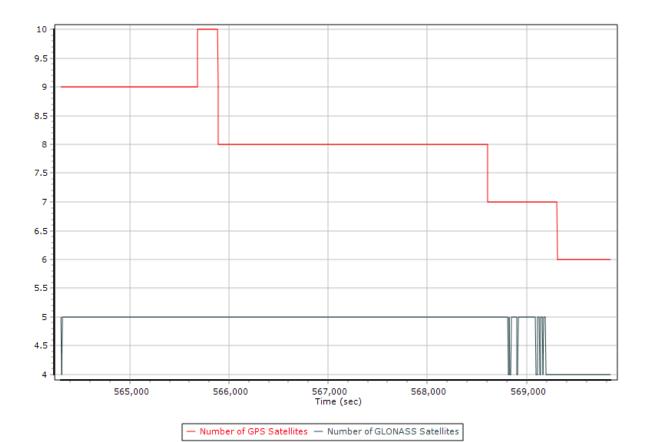




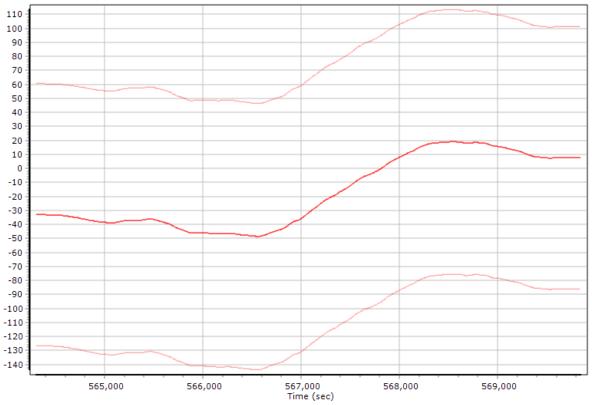


0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

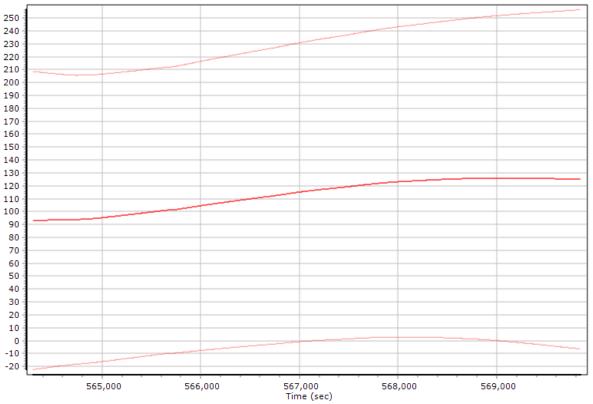




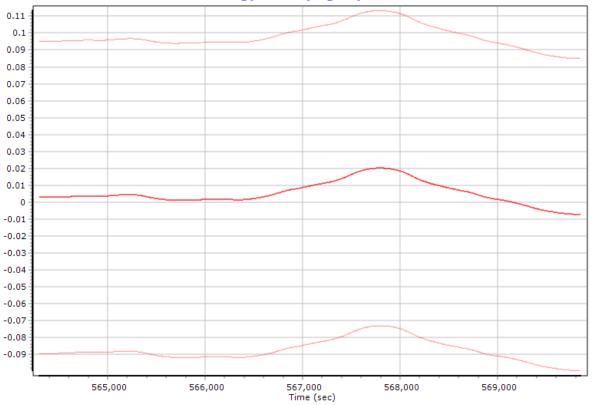
x accelerometer bias (micro-g)



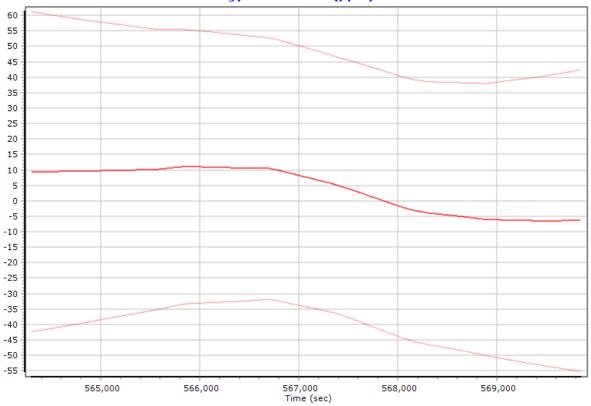
x accelerometer scale error (ppm)



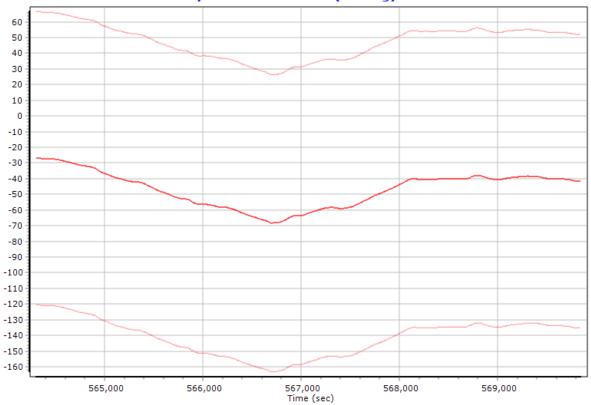




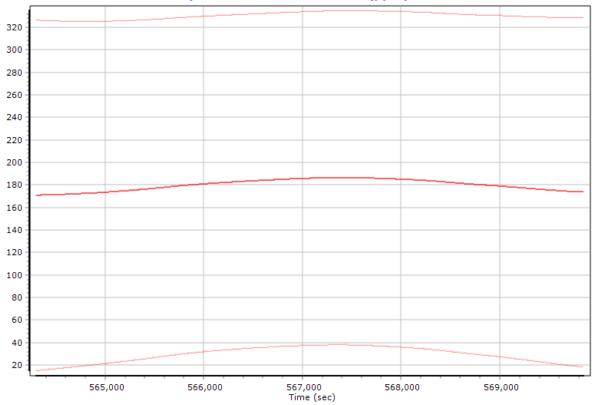




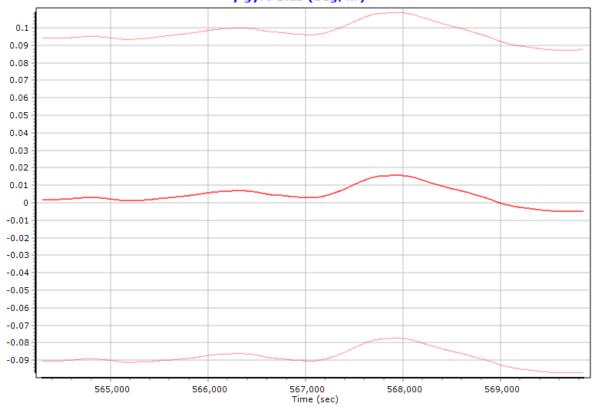




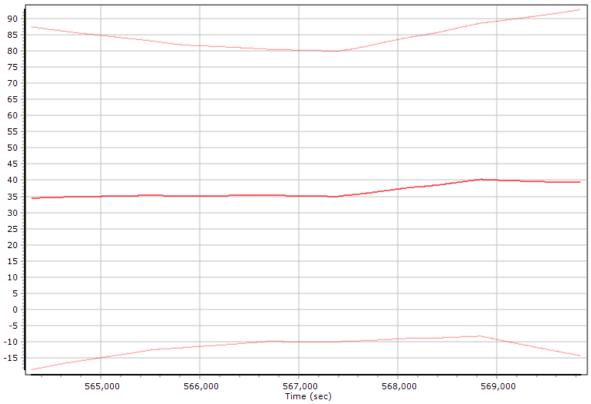
y accelerometer scale error (ppm)



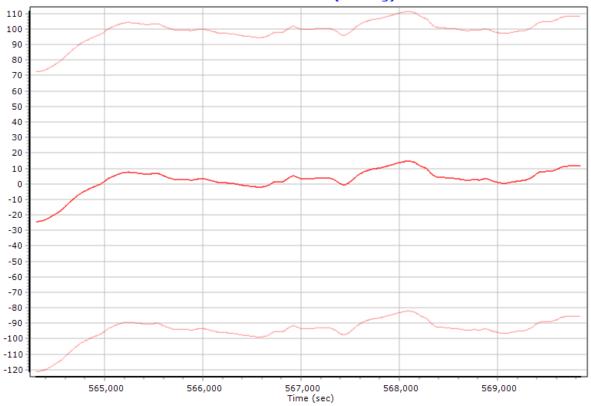




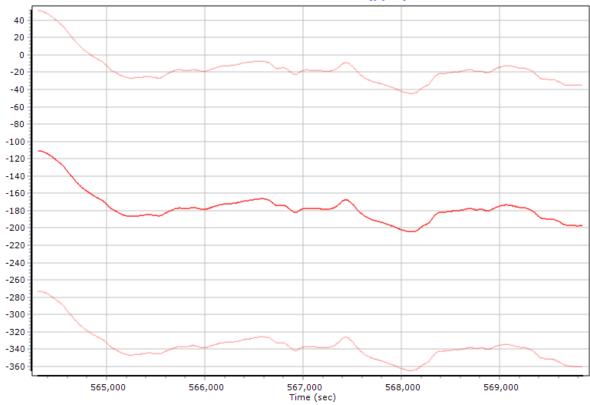




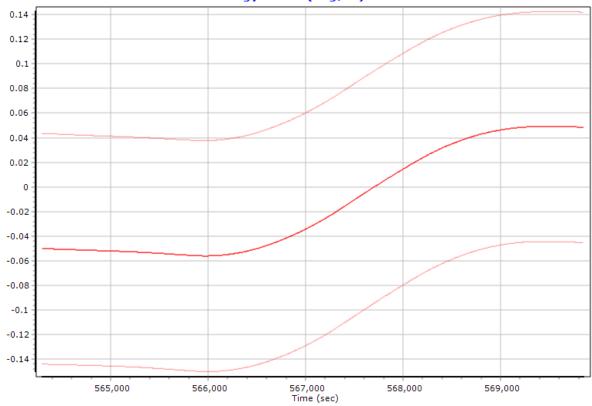
z accelerometer bias (micro-g)

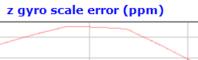


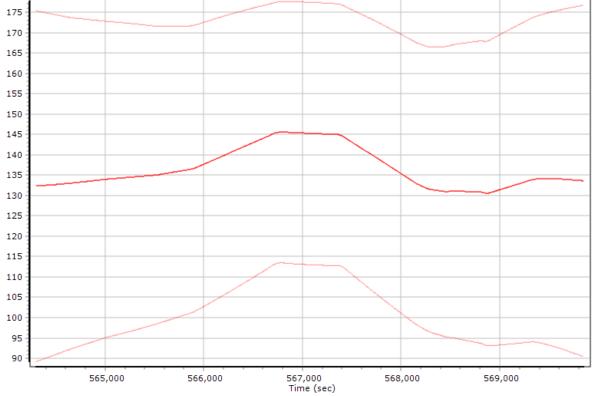




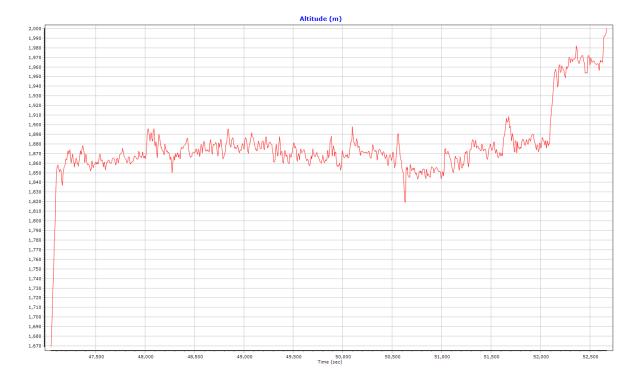


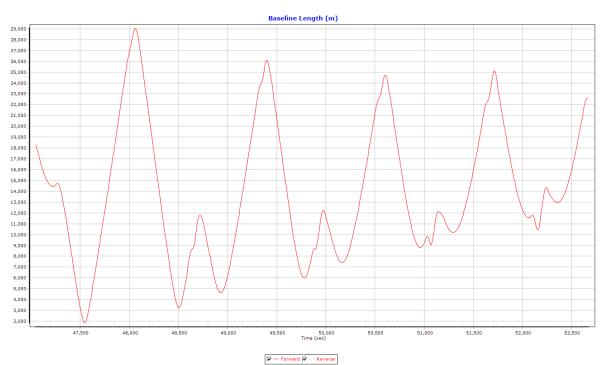


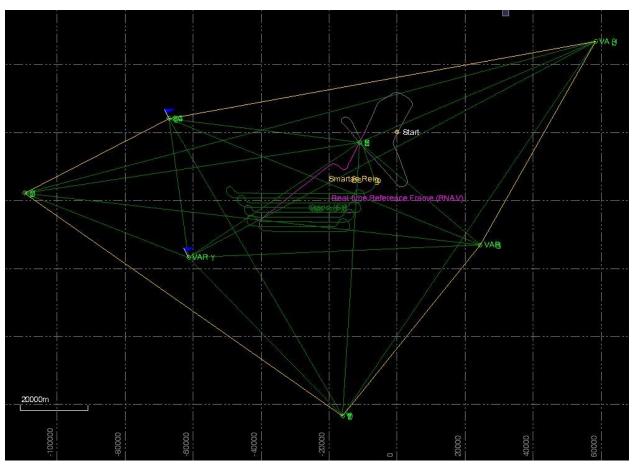


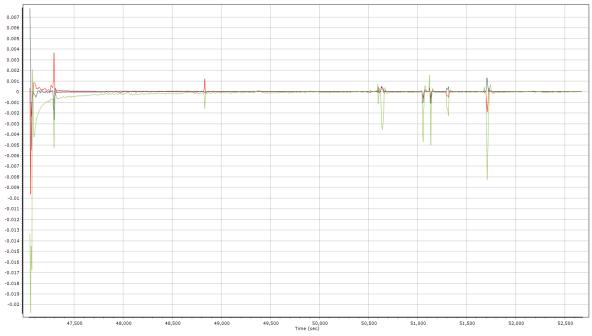


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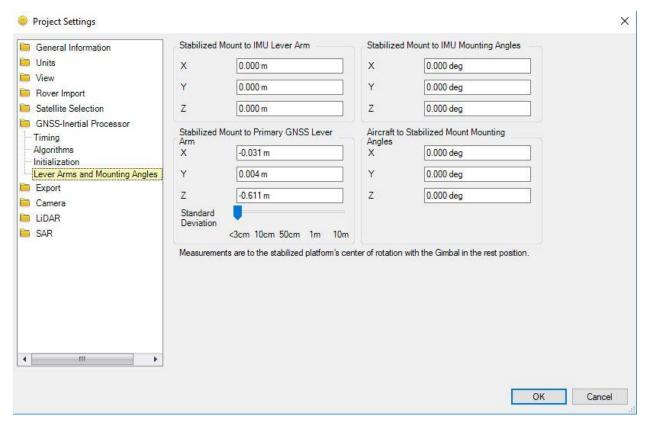


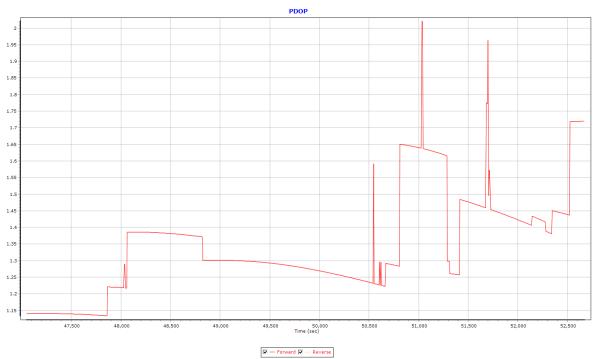


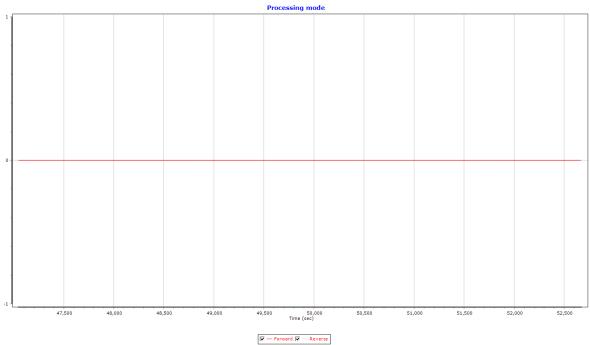




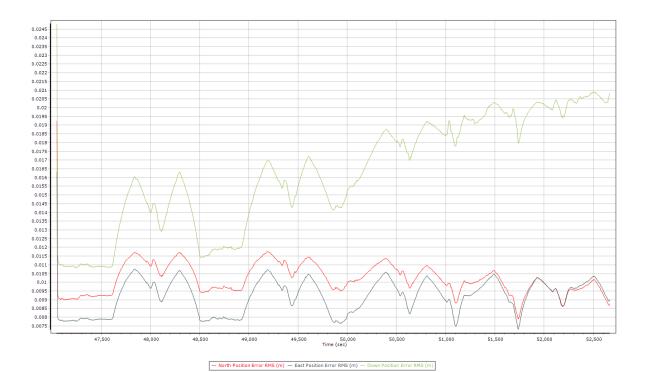
— North (m) — East (m) — Down (m) → DR mode

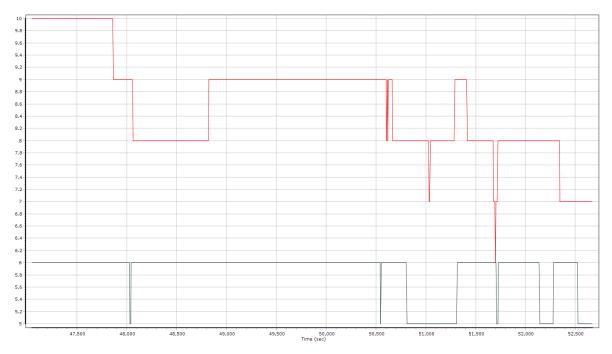




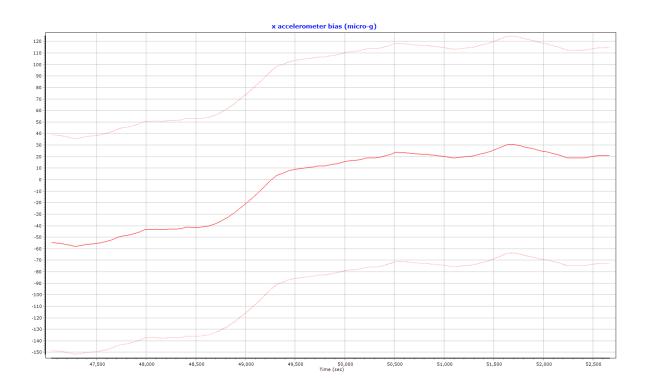


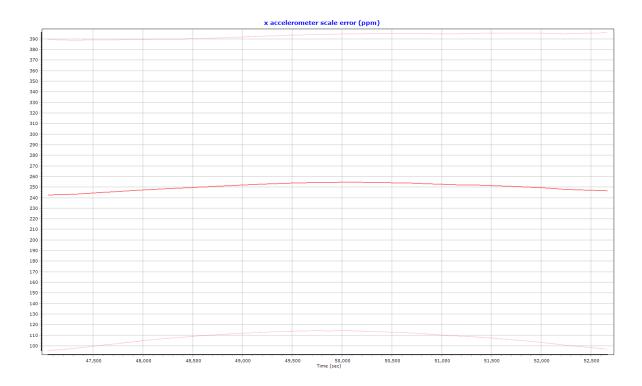
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

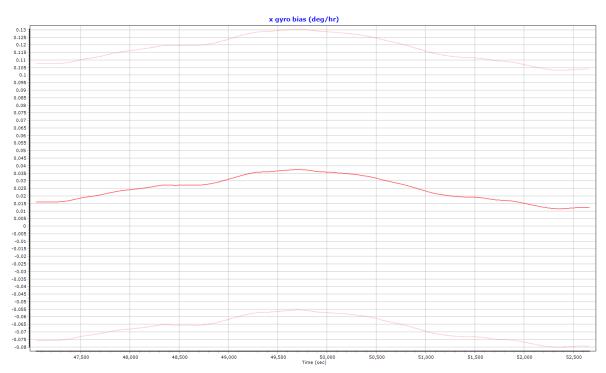


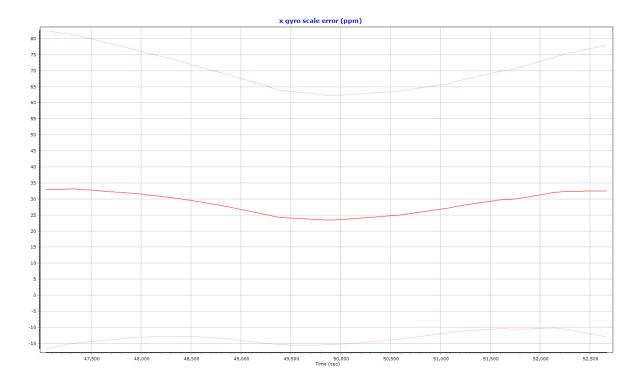


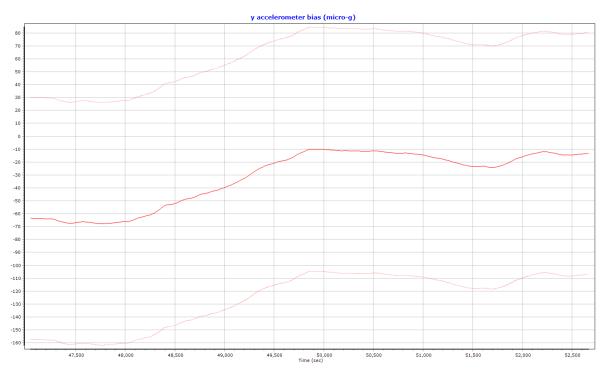
— Number of GPS Satellites — Number of GLONASS Satellites

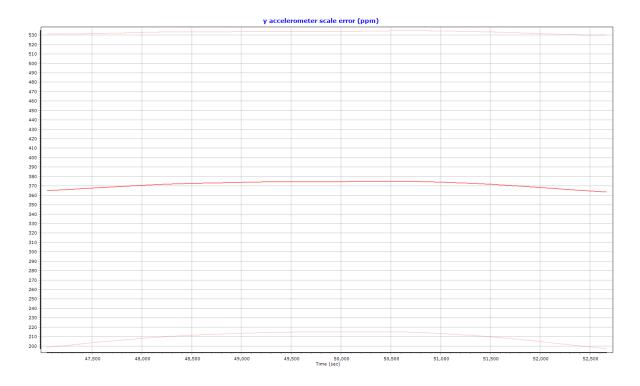


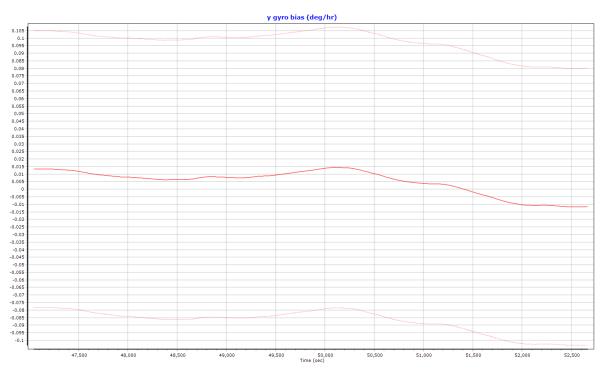


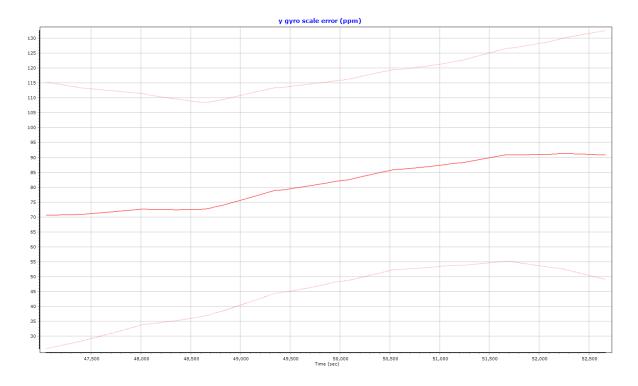


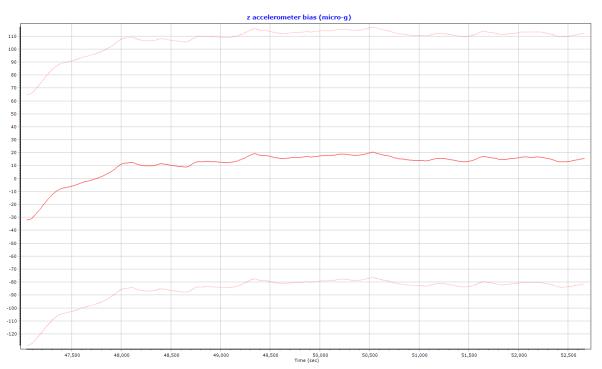


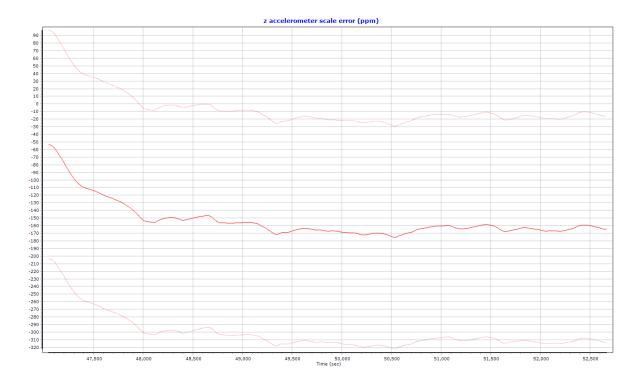


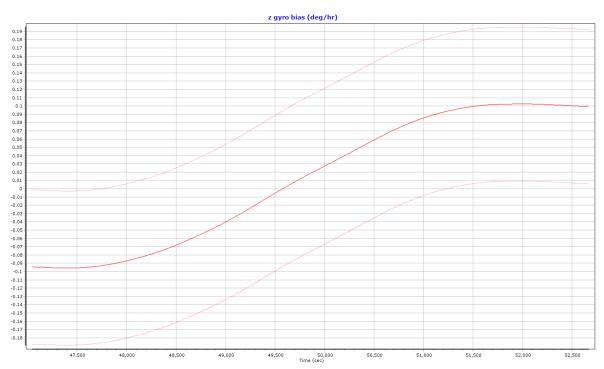


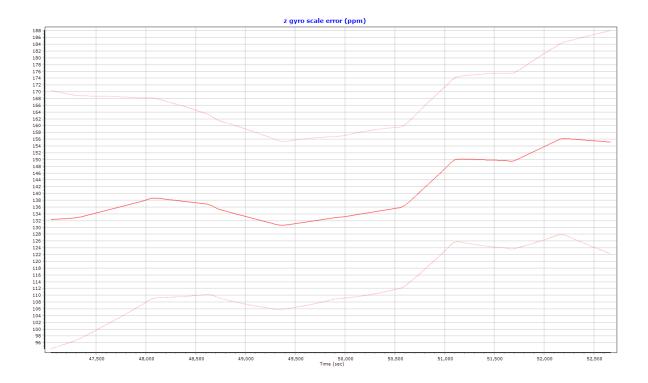




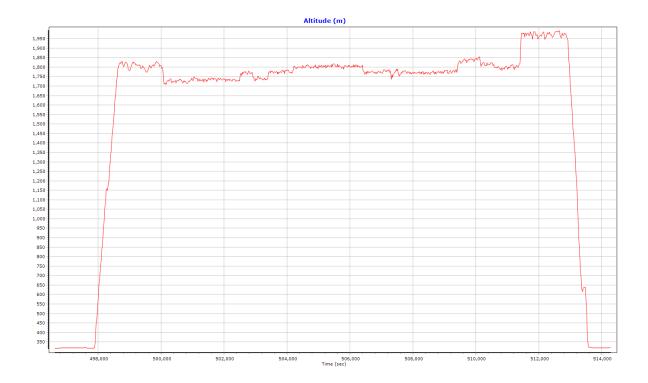


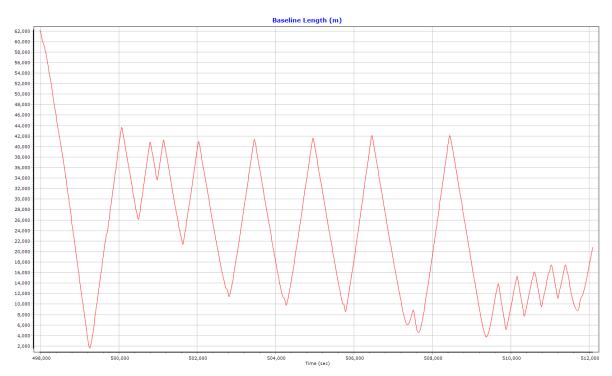


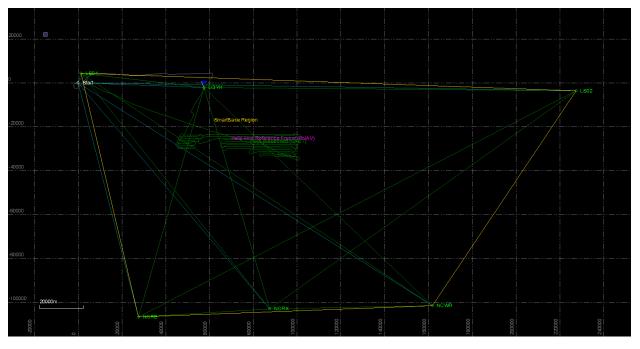


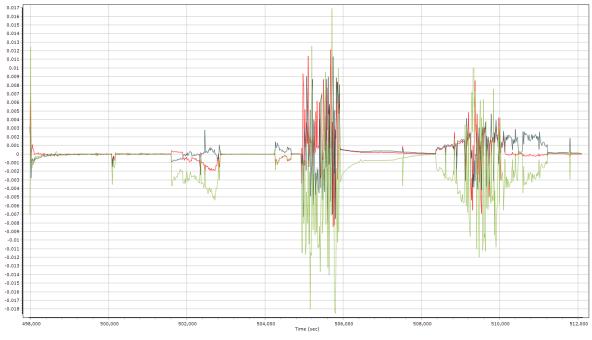


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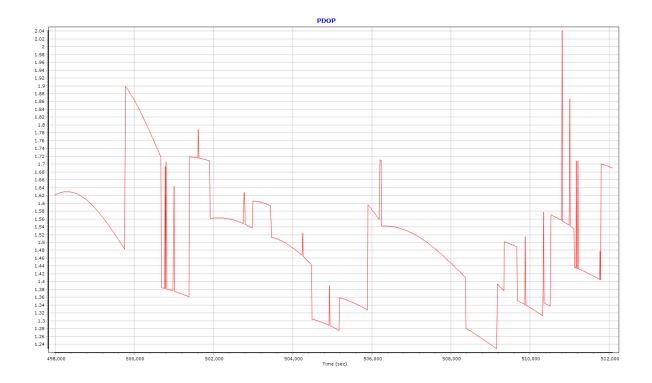


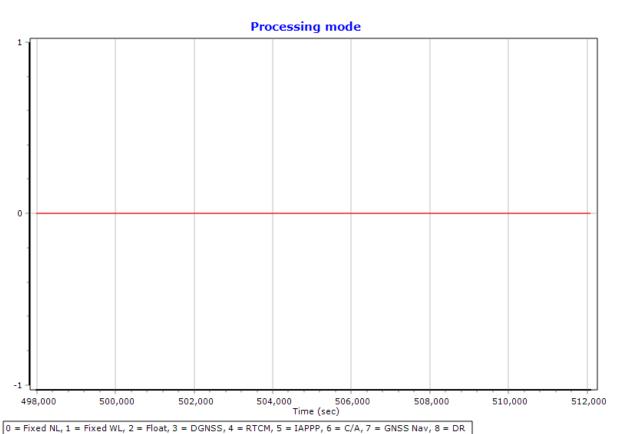


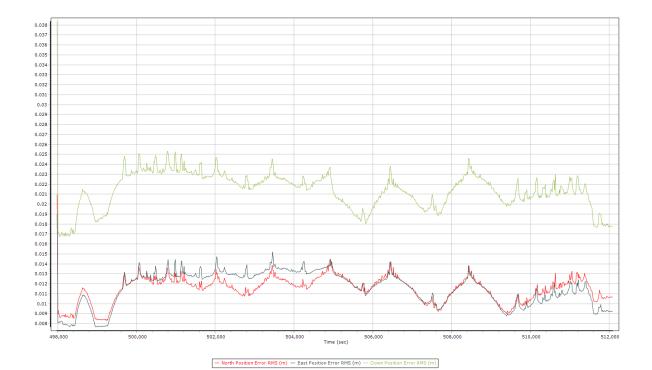


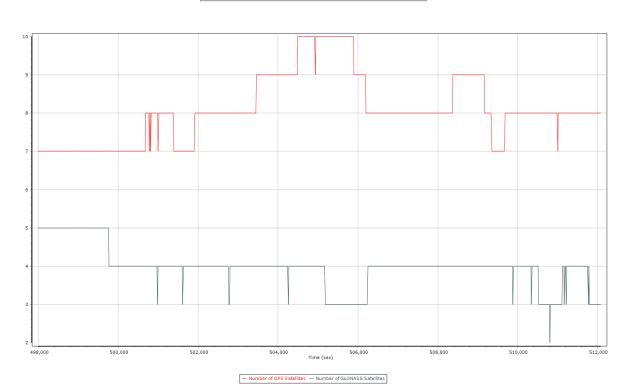


— North (m) — East (m) — Down (m) → DR mode

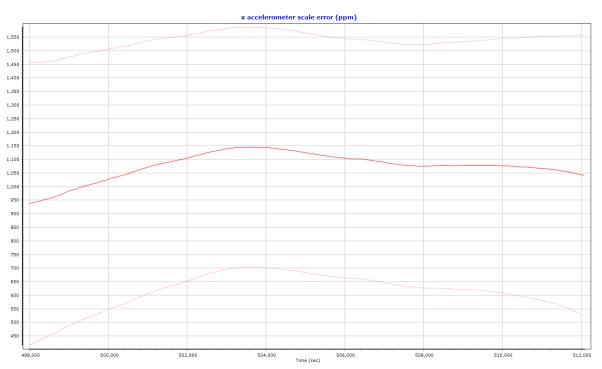


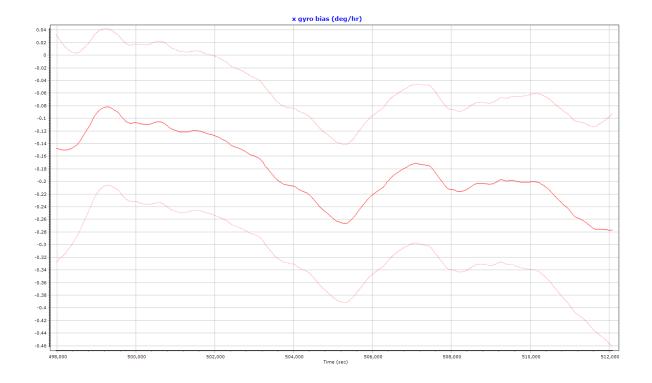


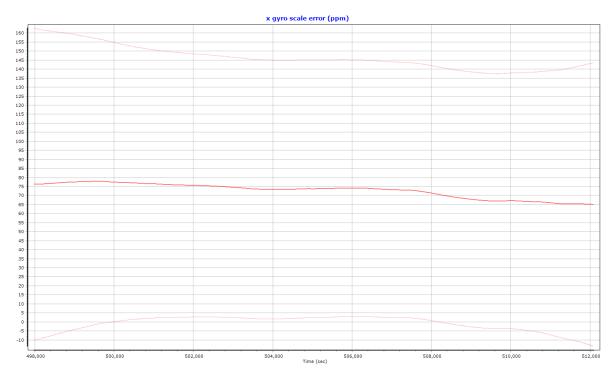




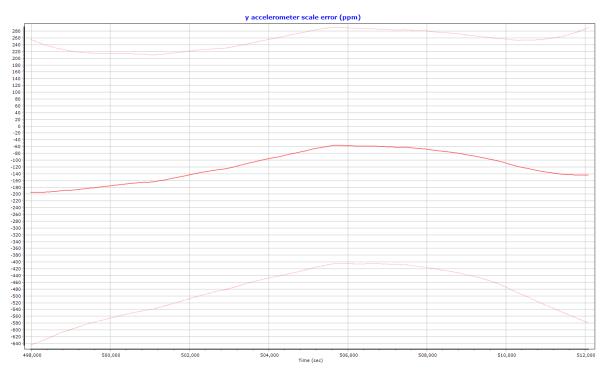


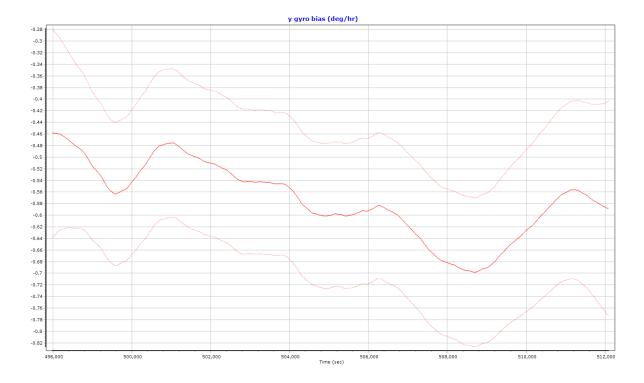


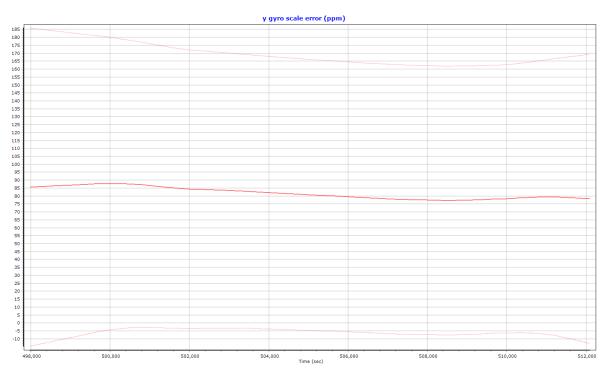


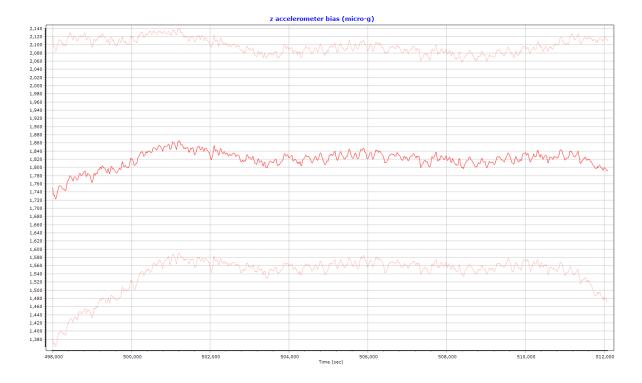


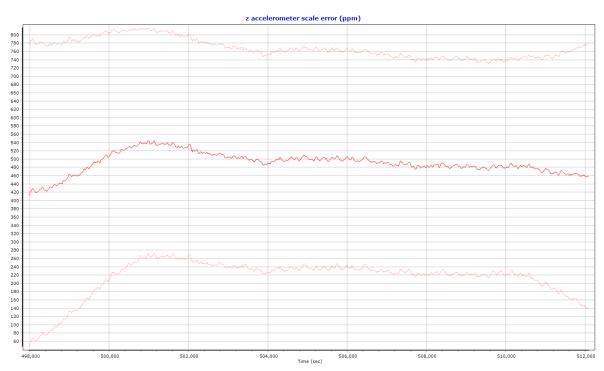


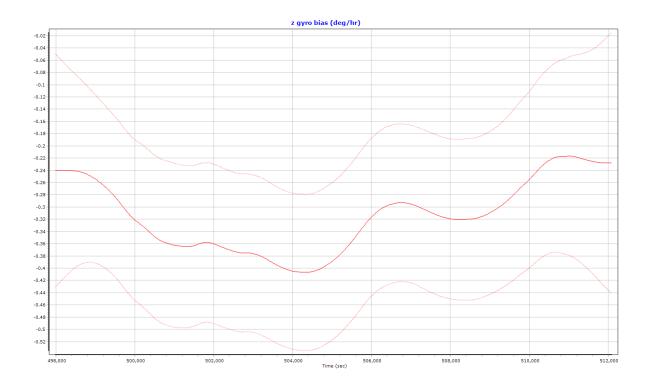


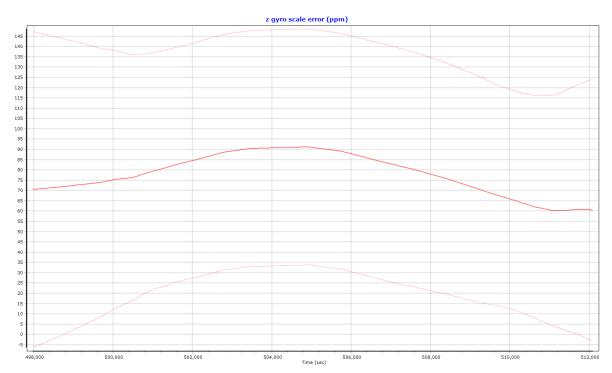


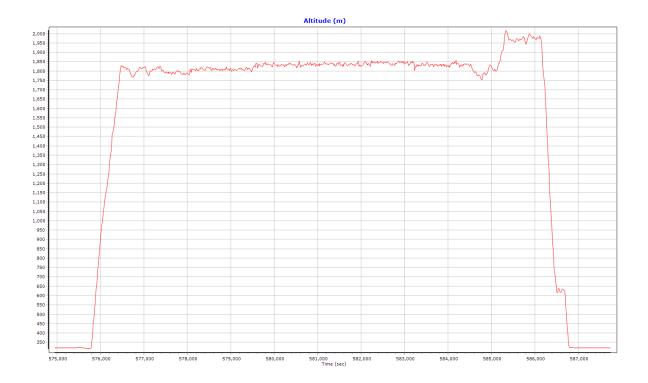


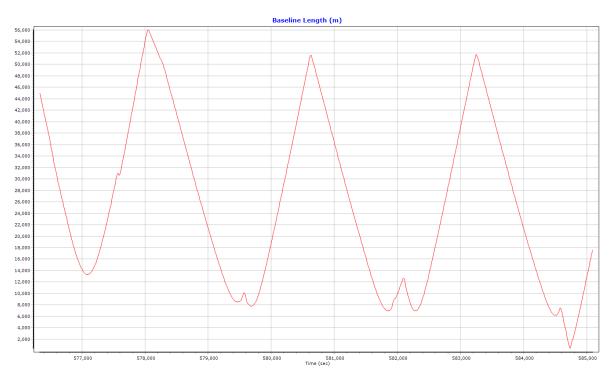


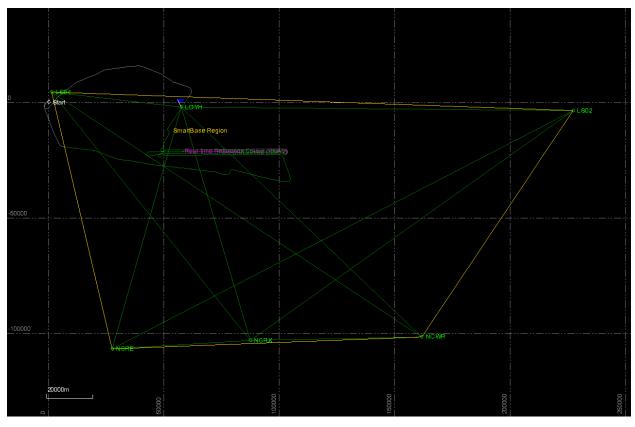






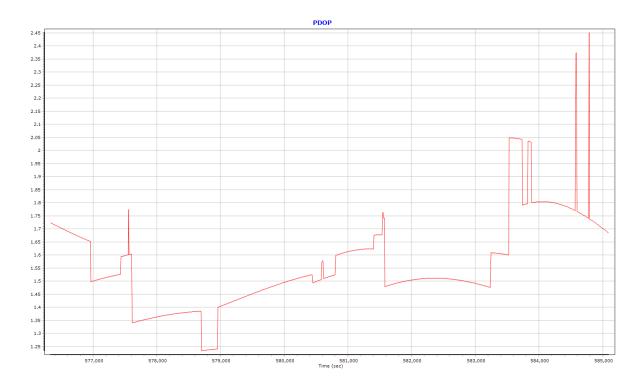


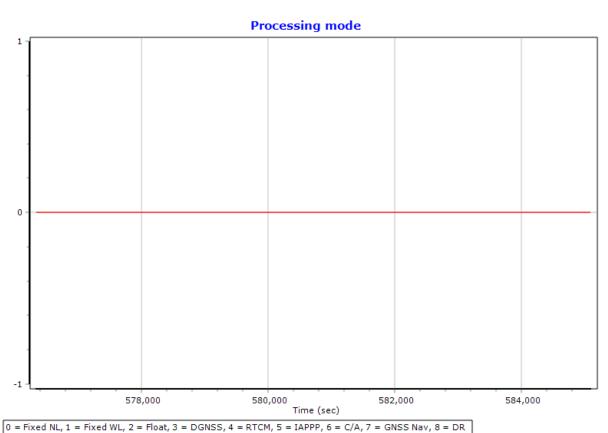


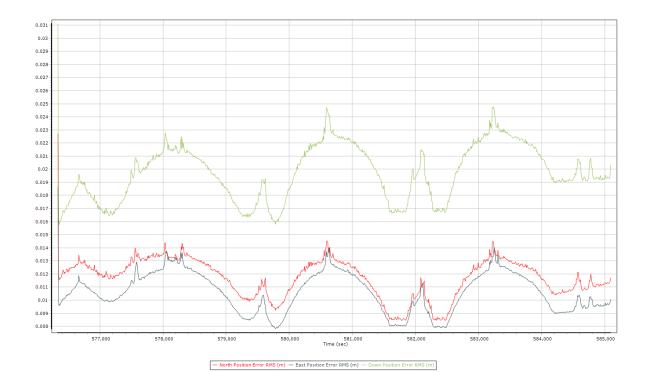


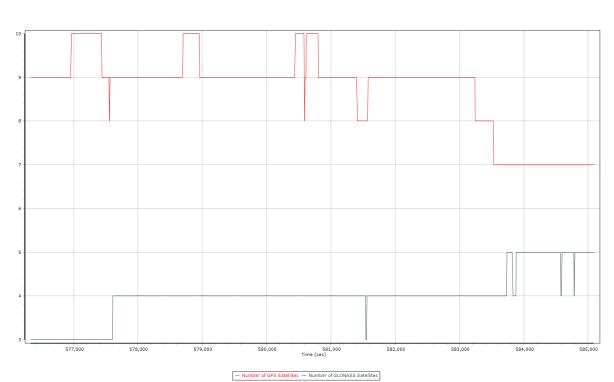


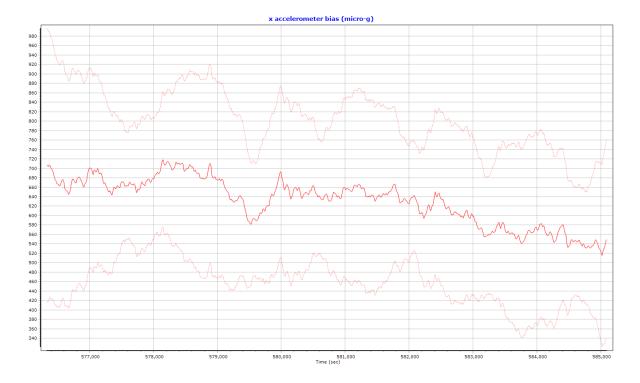
— North (m) — East (m) — Down (m) → DR mode

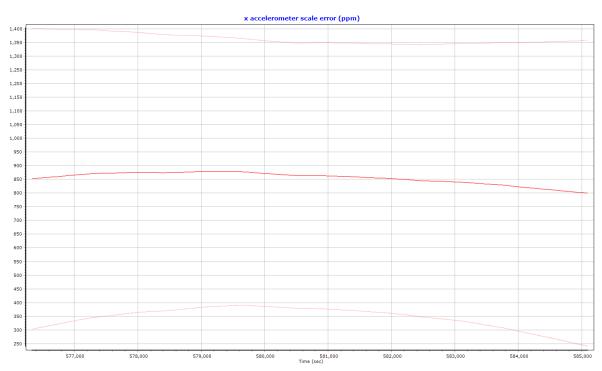


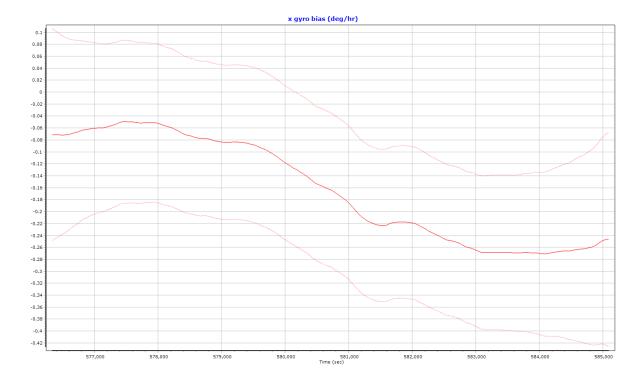


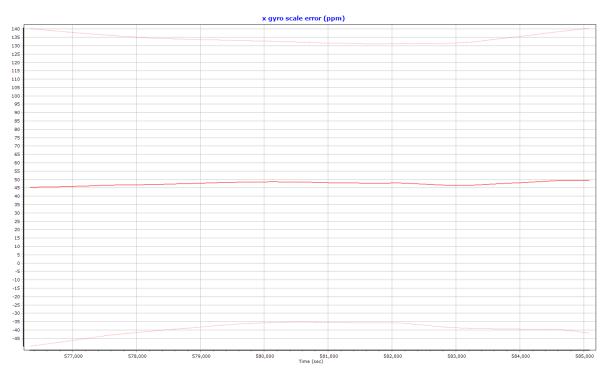


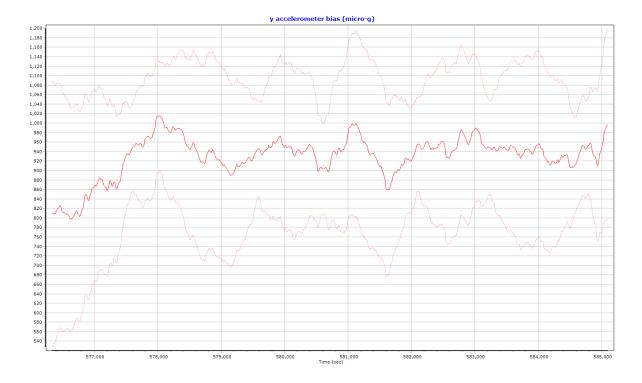


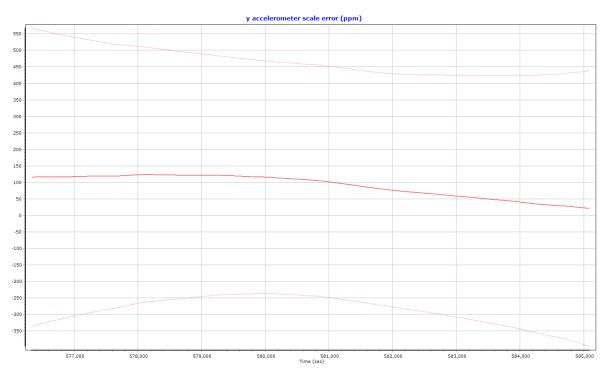


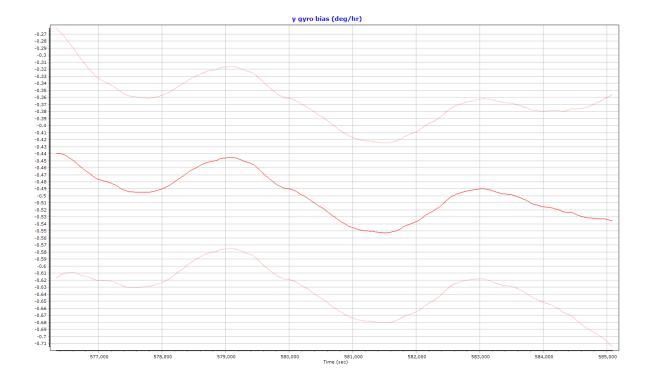


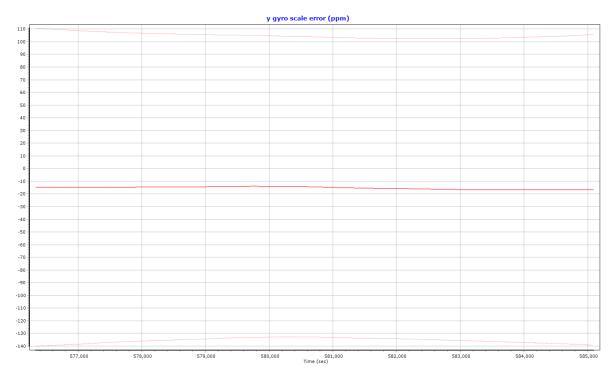


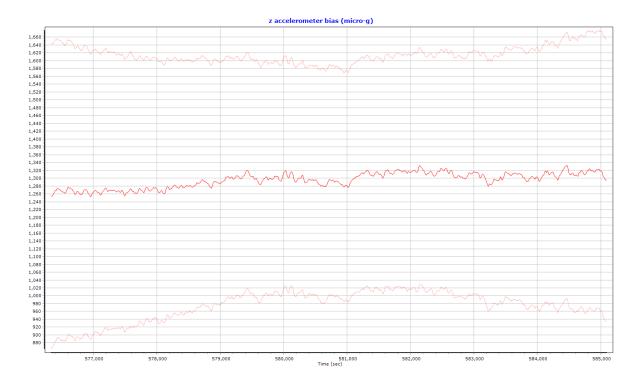


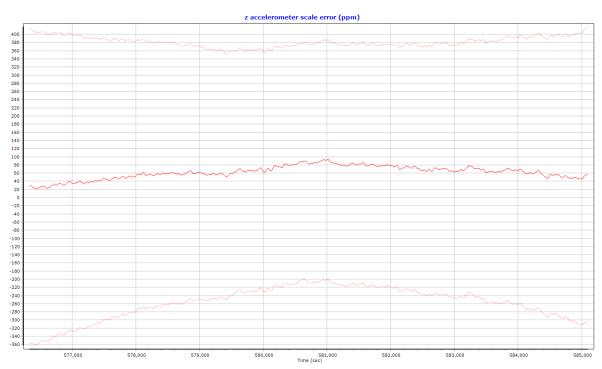


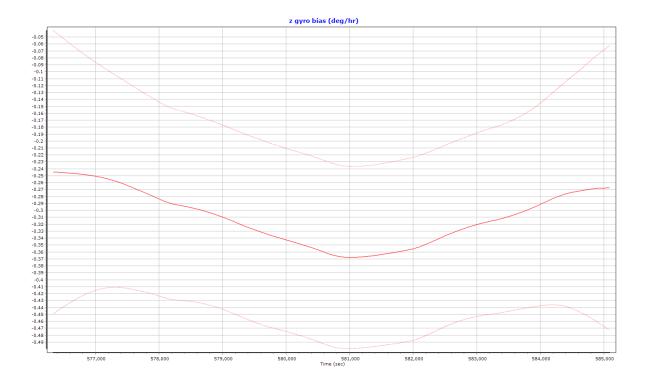


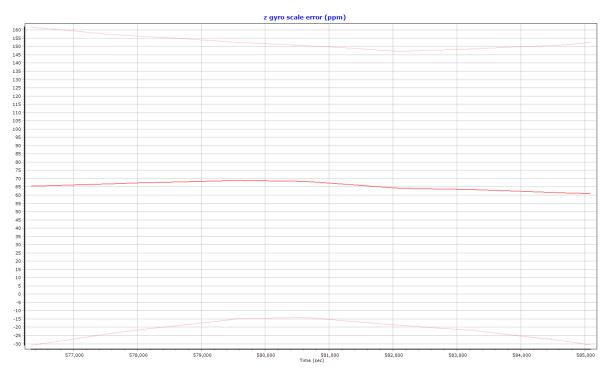


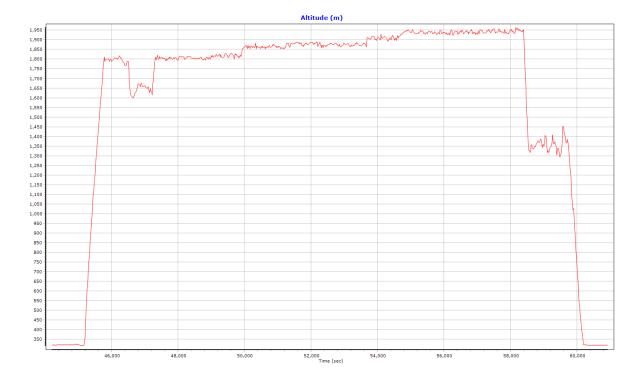


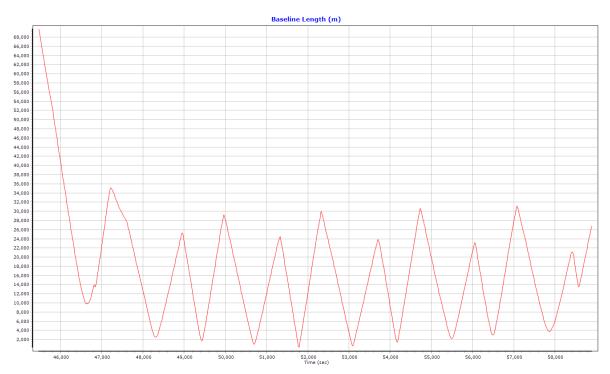


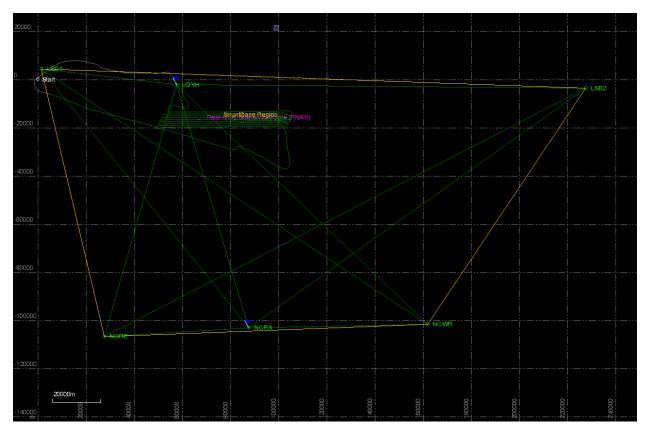




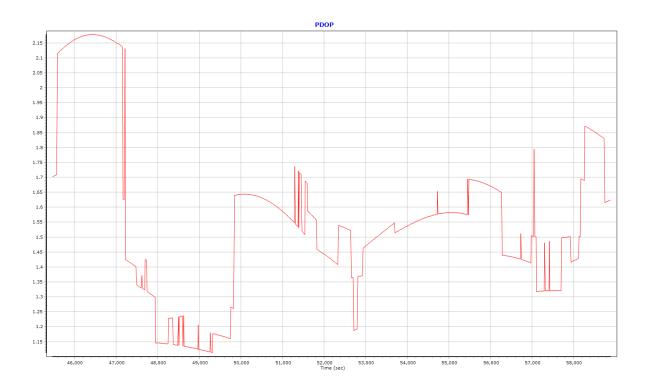


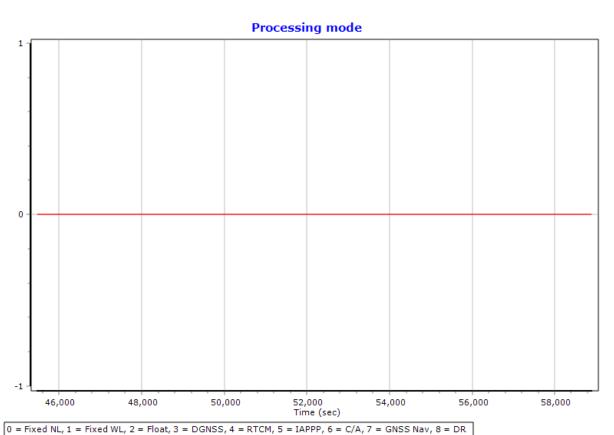


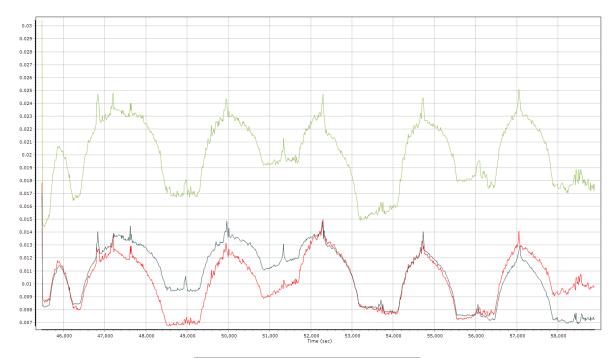


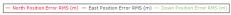


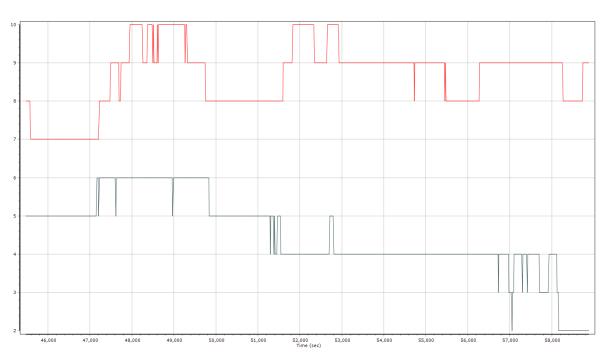




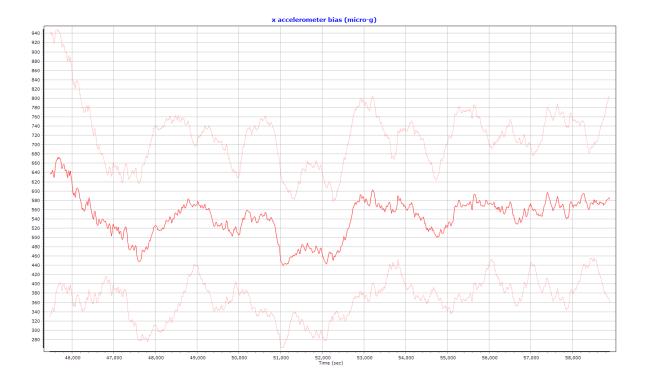


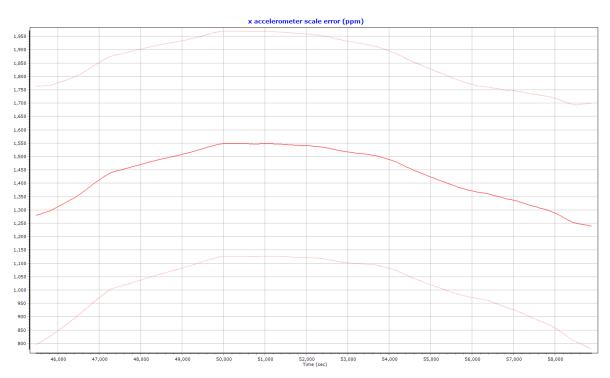


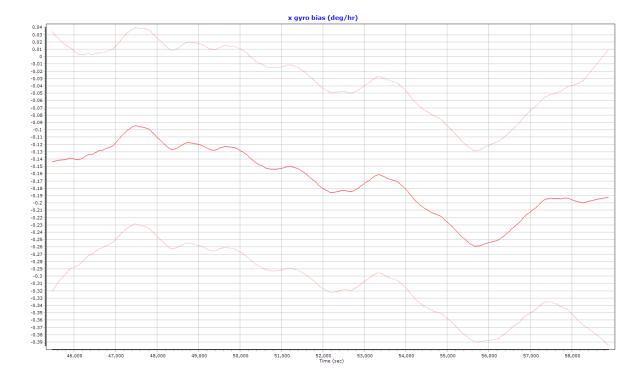


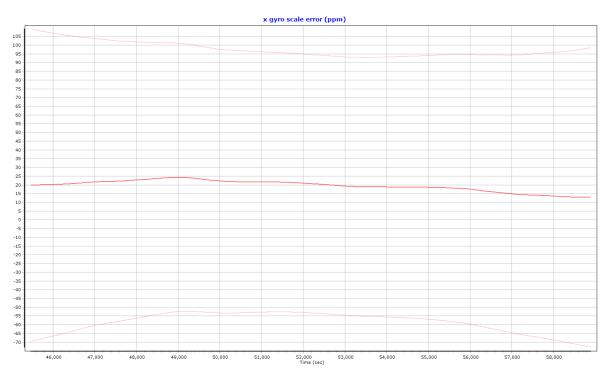


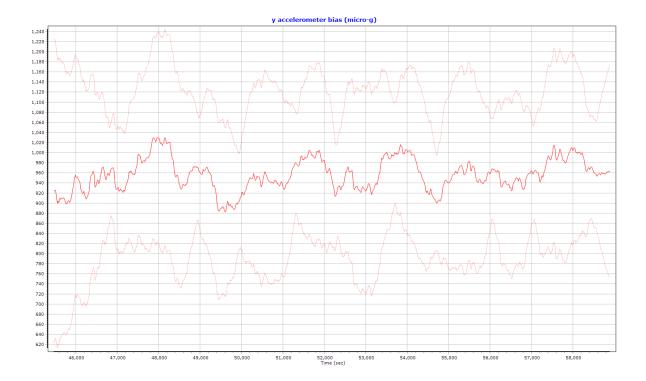
— Number of GPS Satellites — Number of GLONASS Satellites

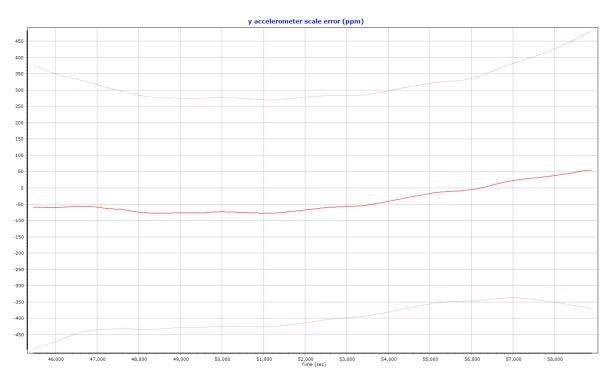


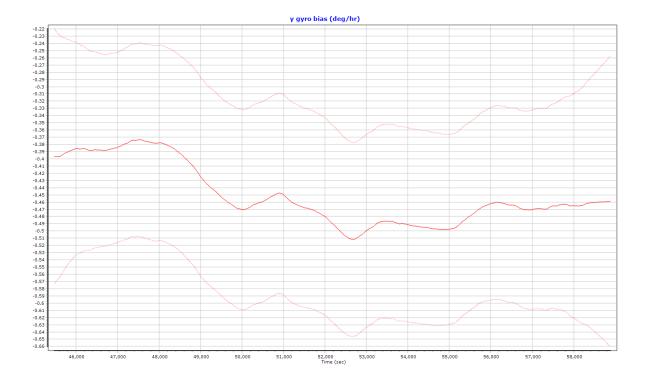


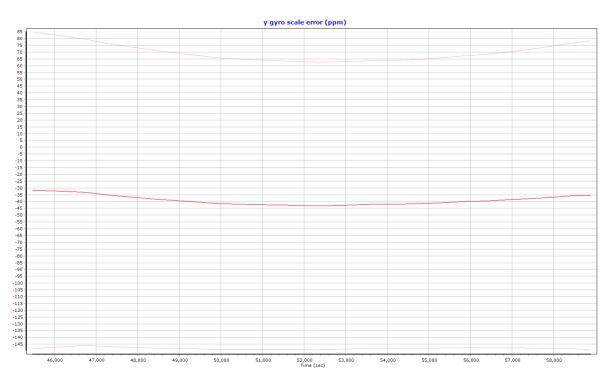


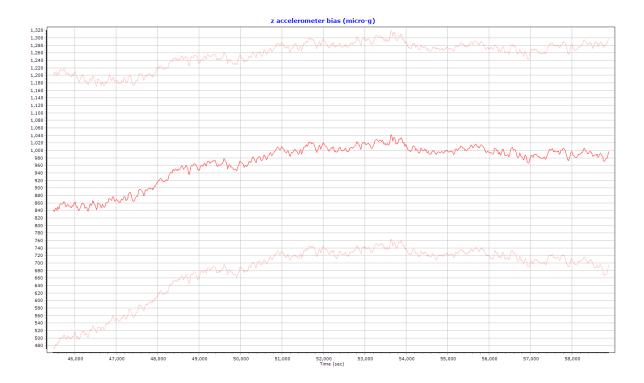


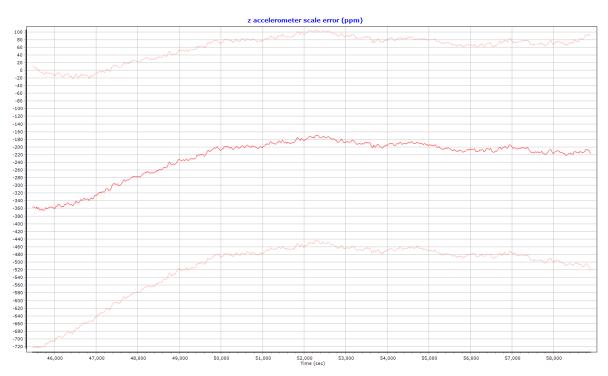


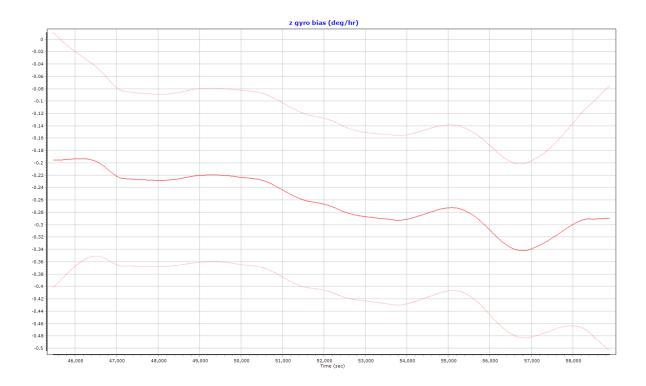


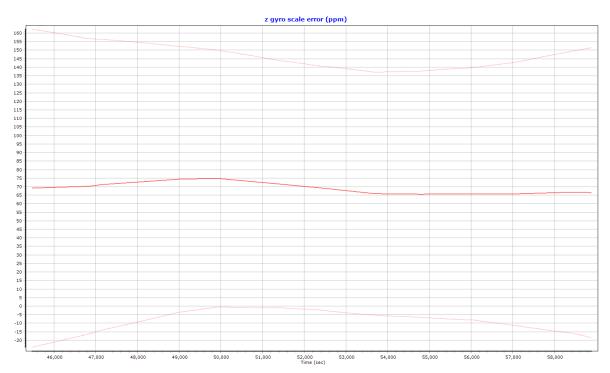


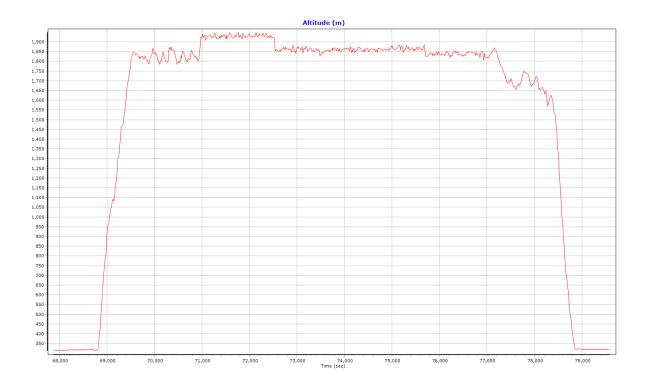


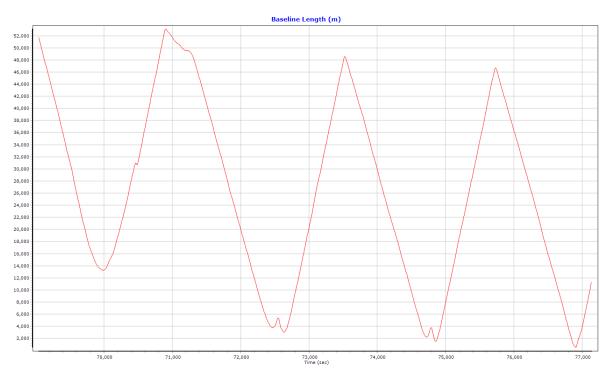


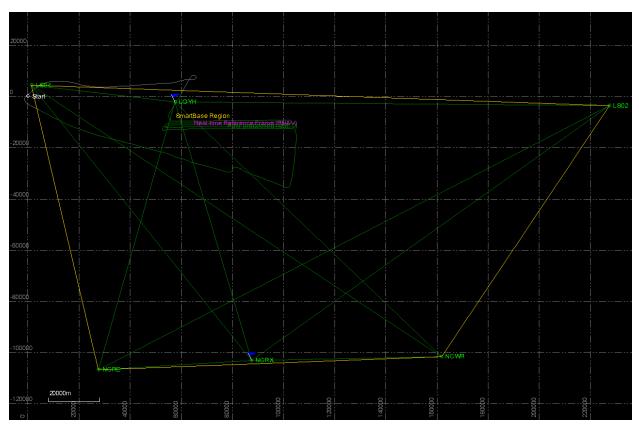




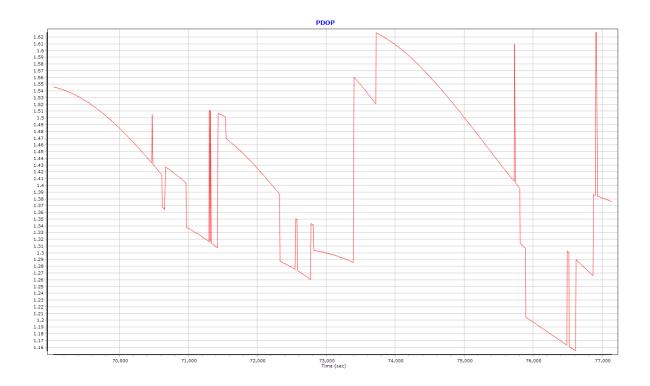


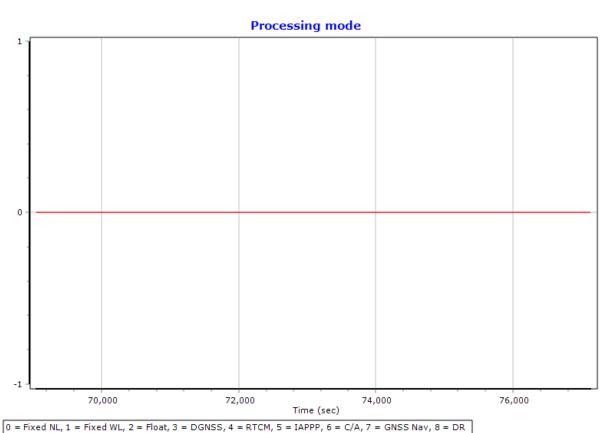


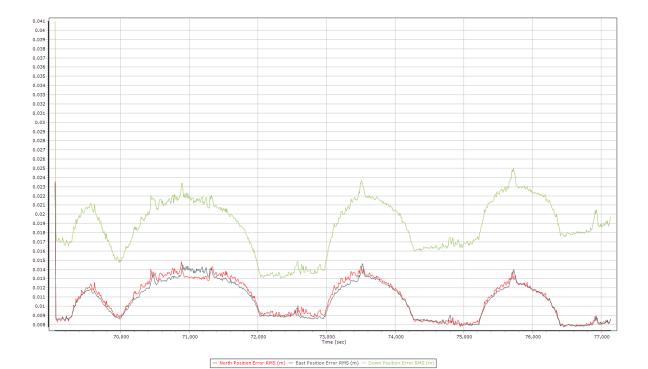


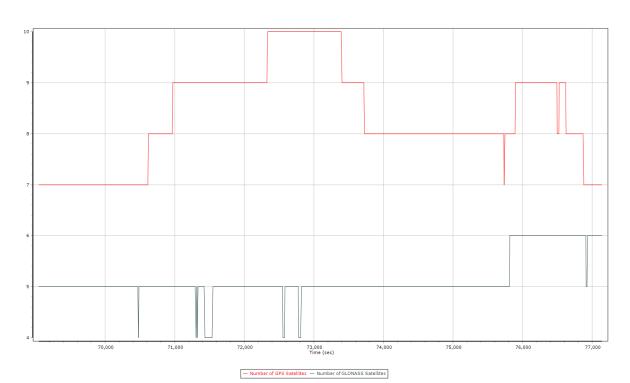


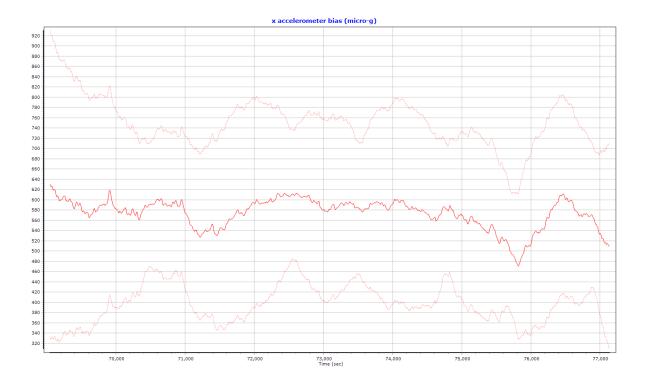


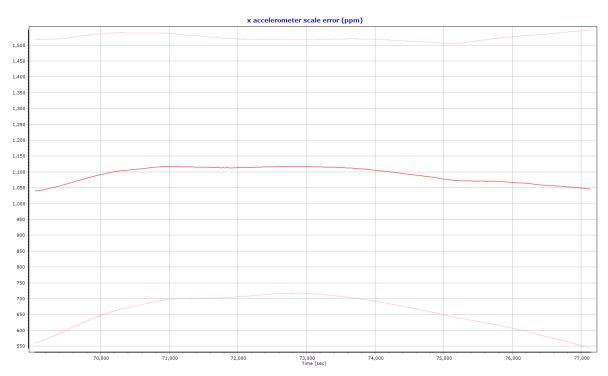


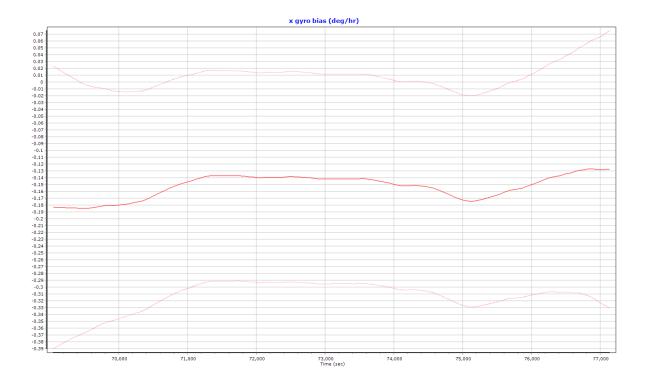


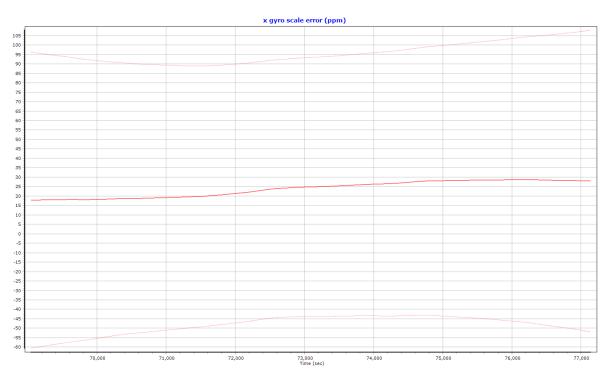


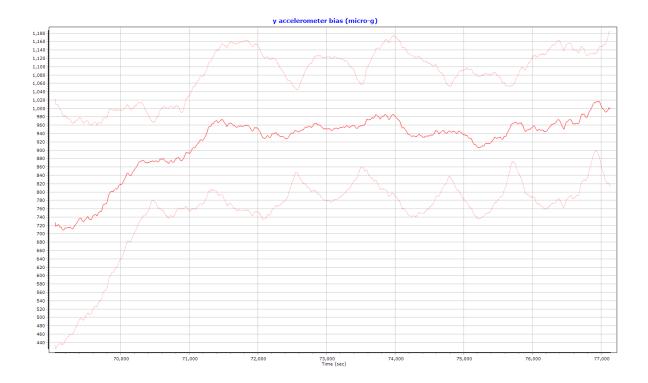


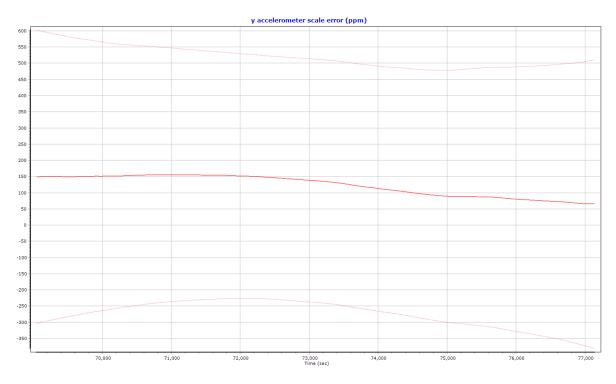


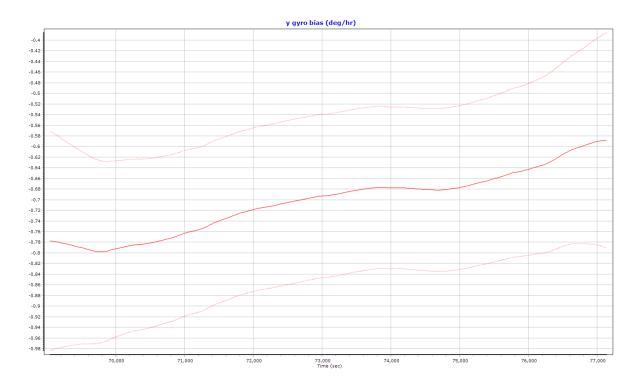


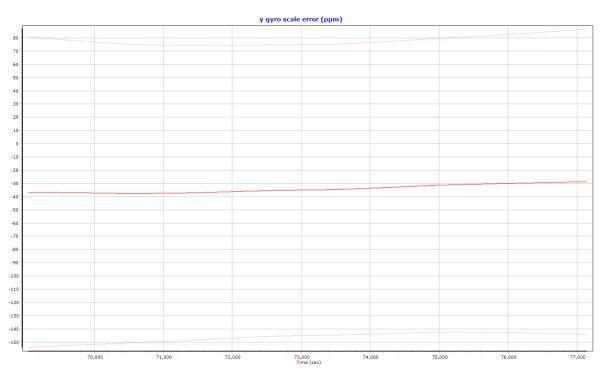


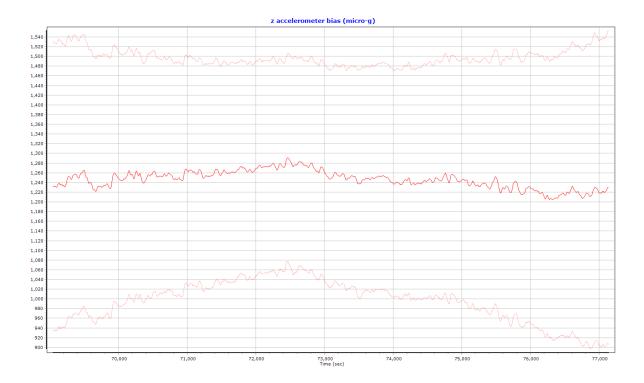


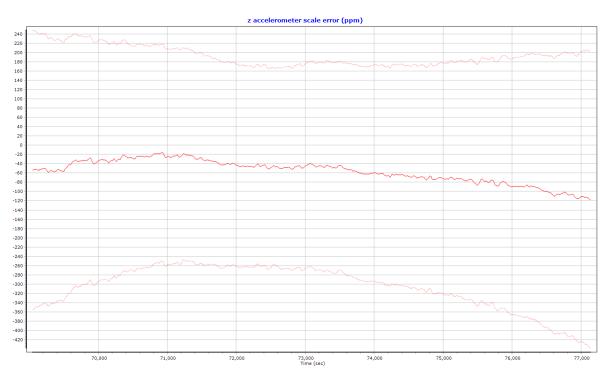


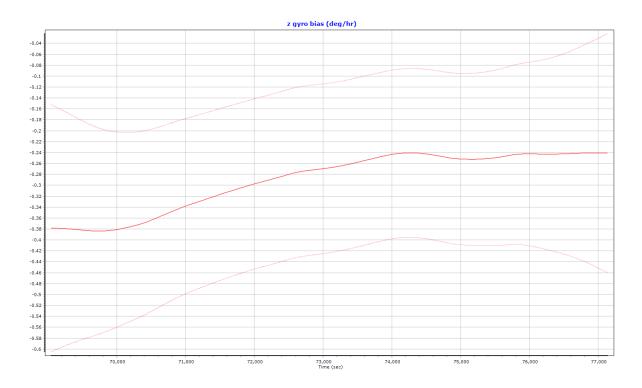


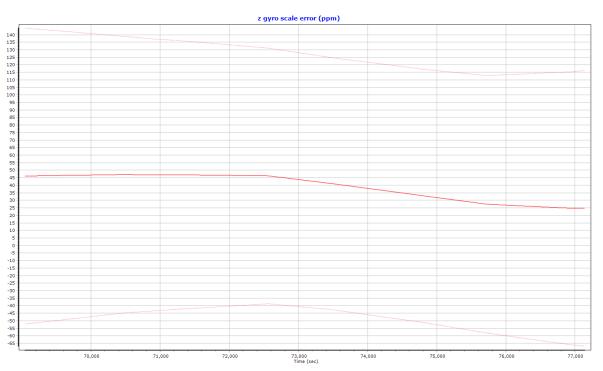


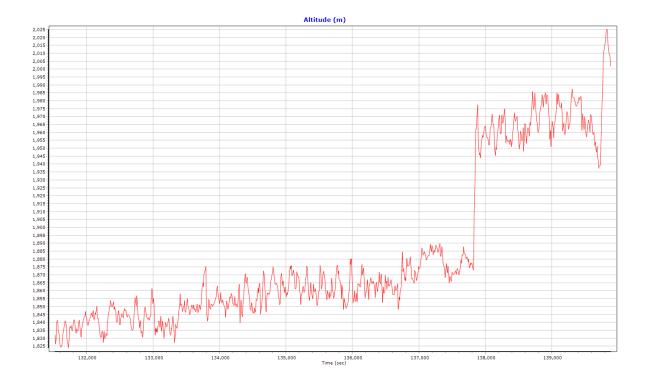


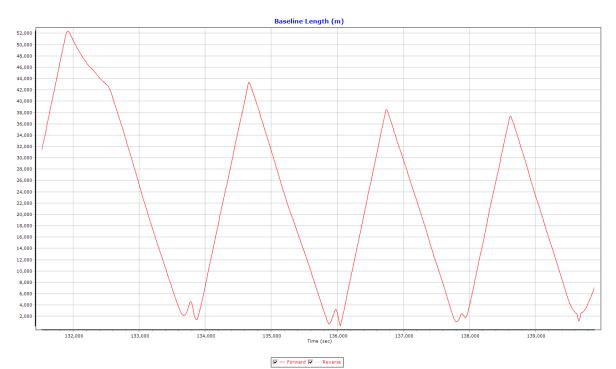


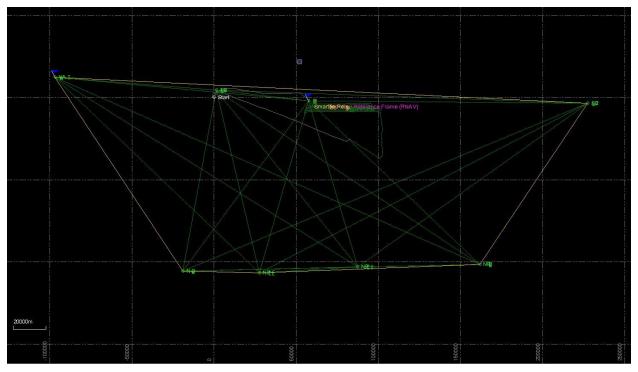


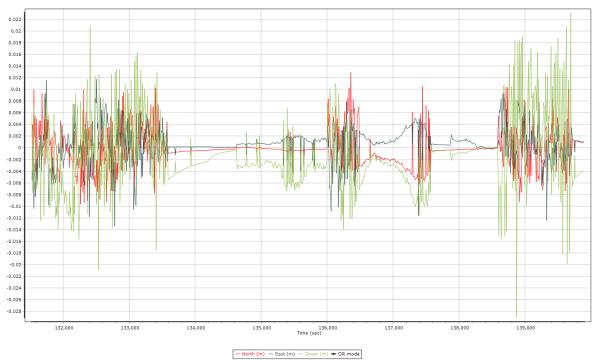




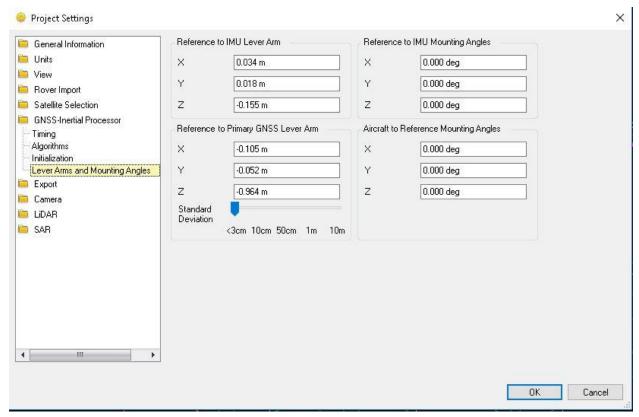


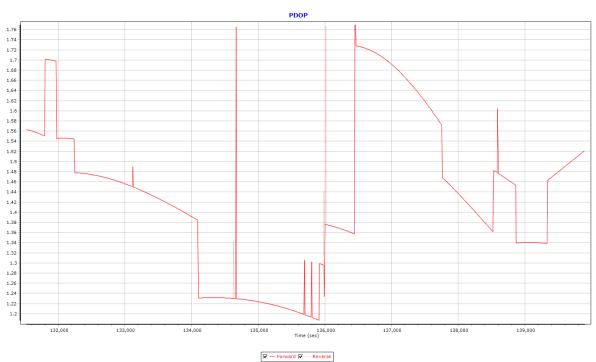


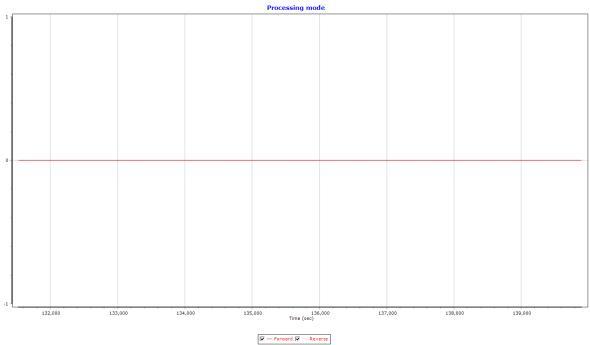




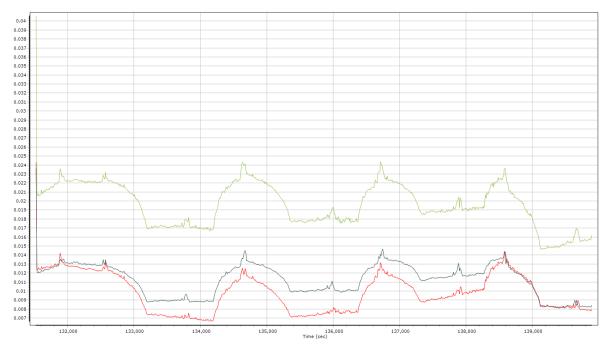
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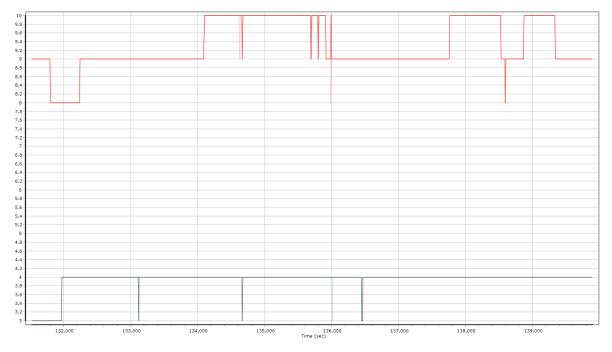






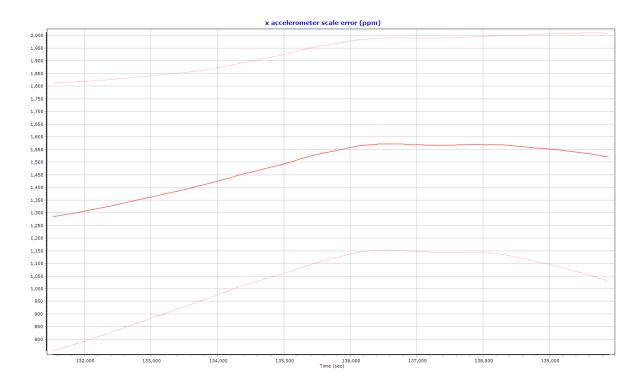
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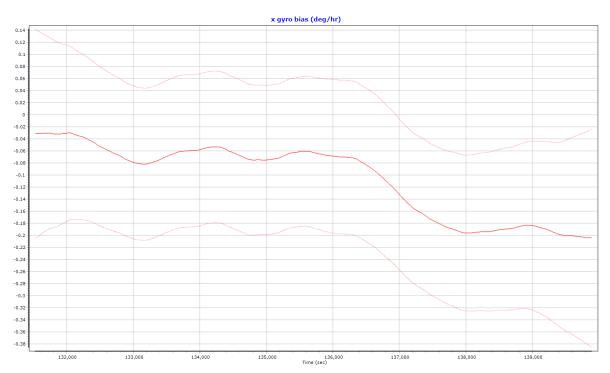


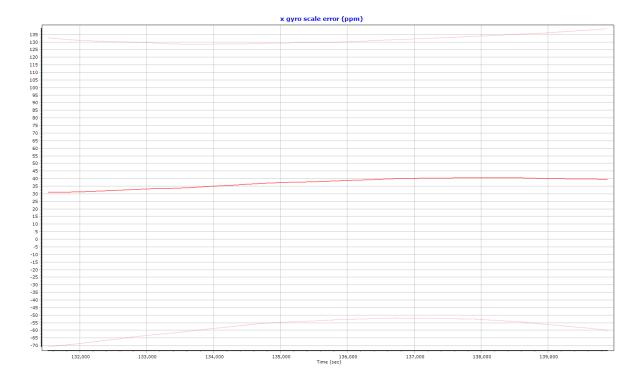


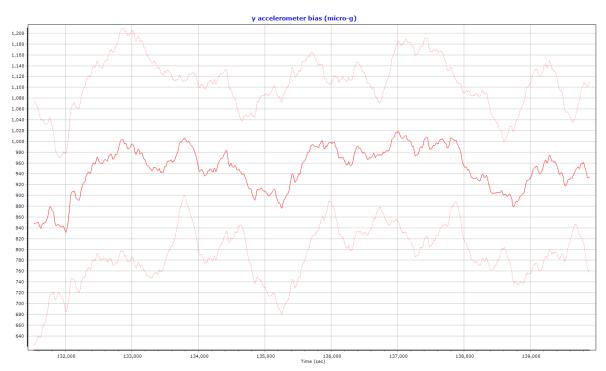


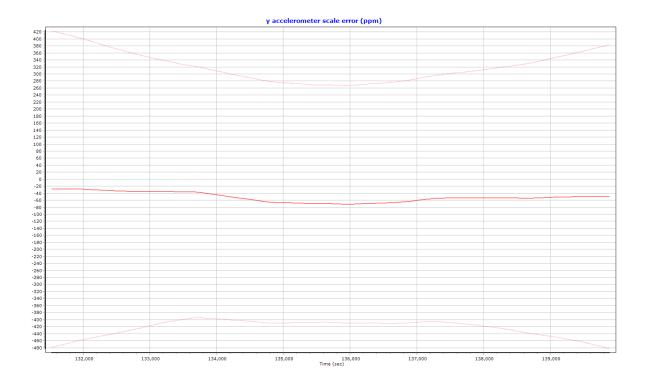


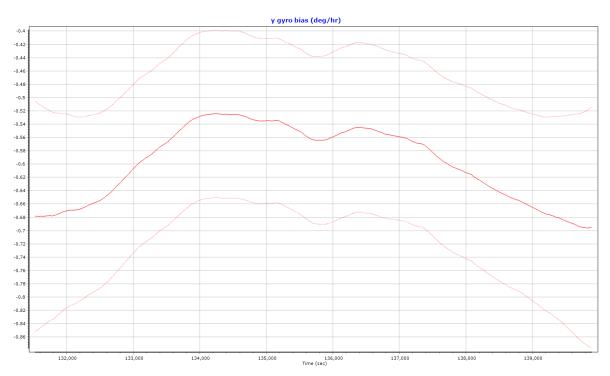


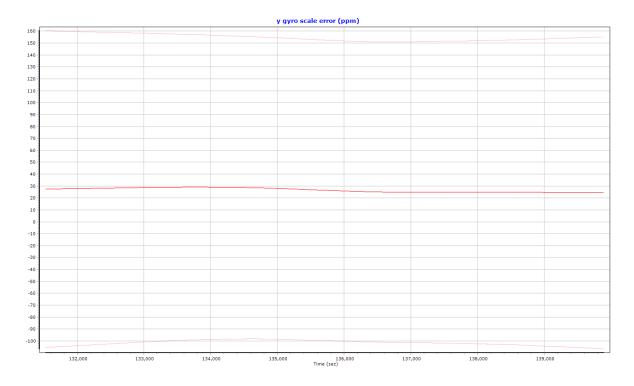


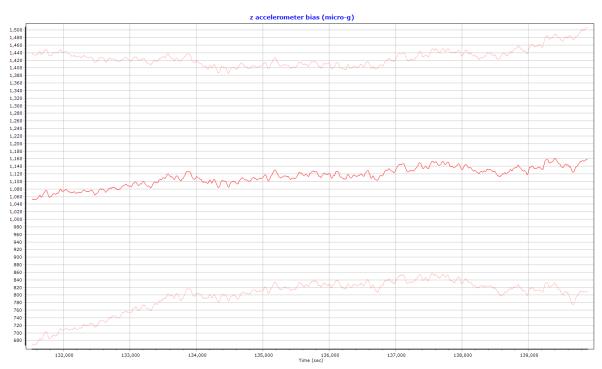


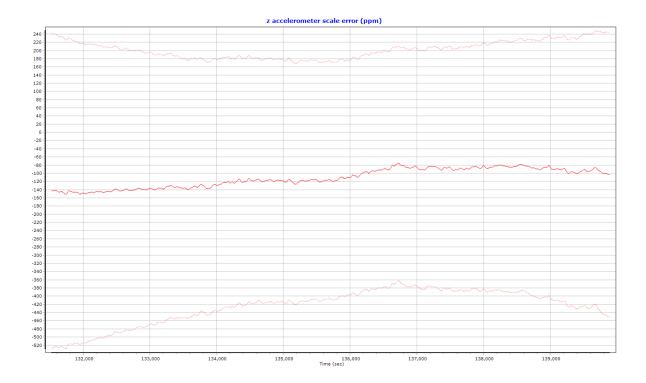


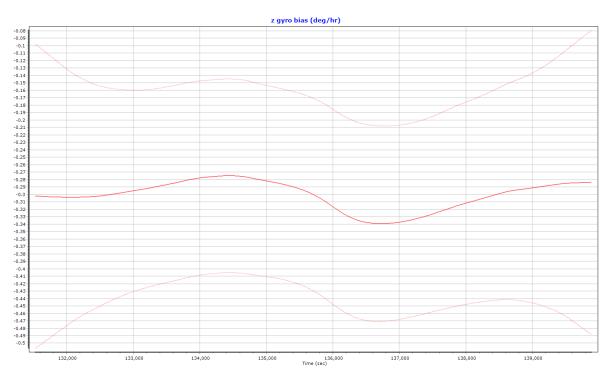


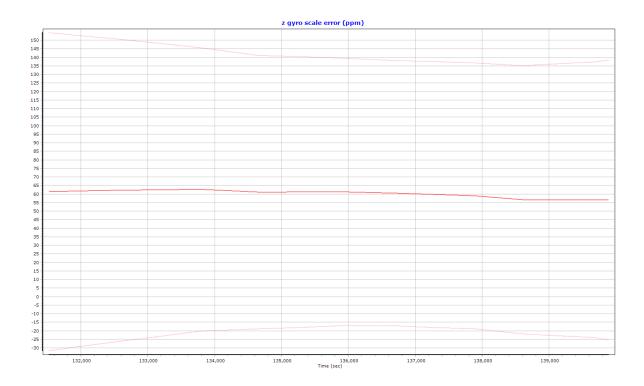




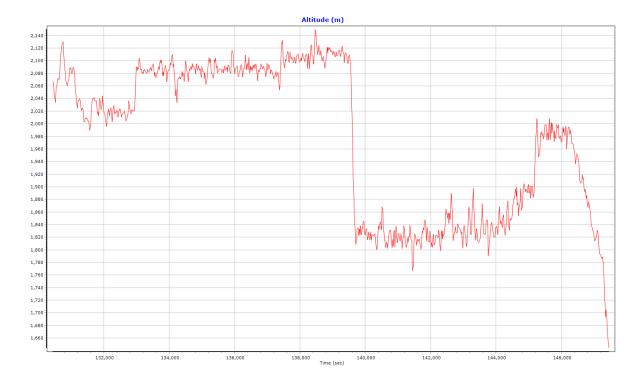


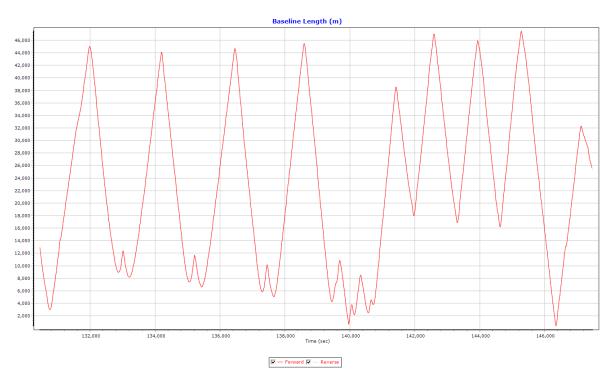


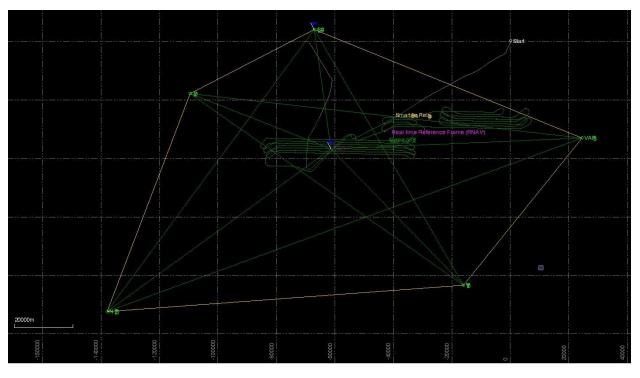


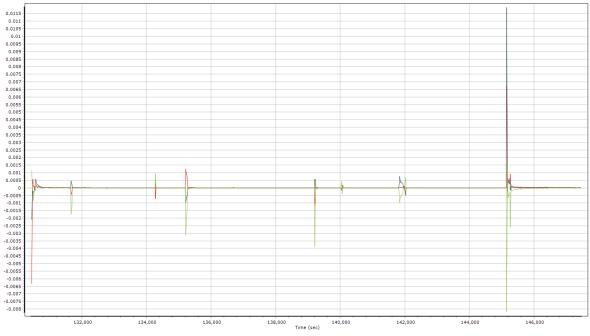


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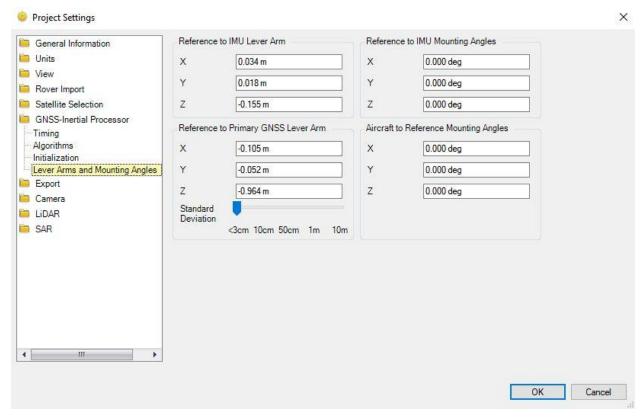


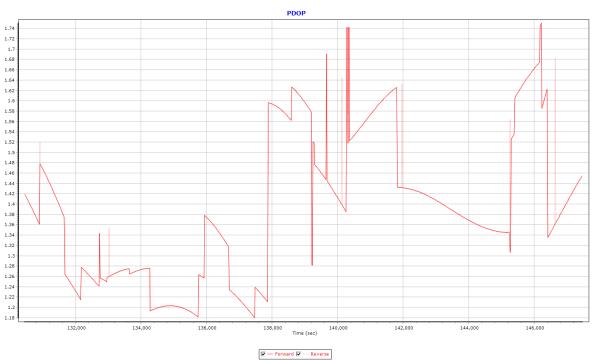


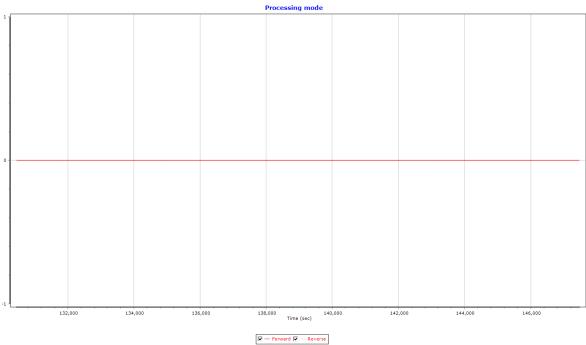




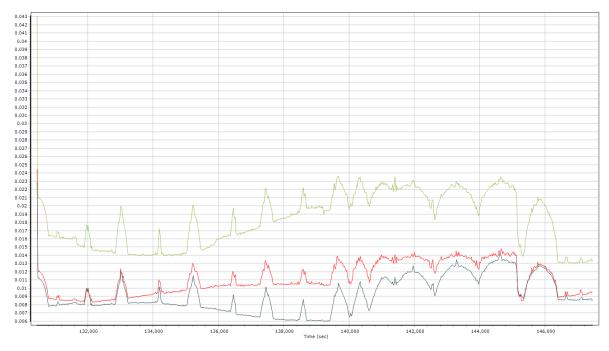
— North (m) — East (m) — Down (m) → DR mode



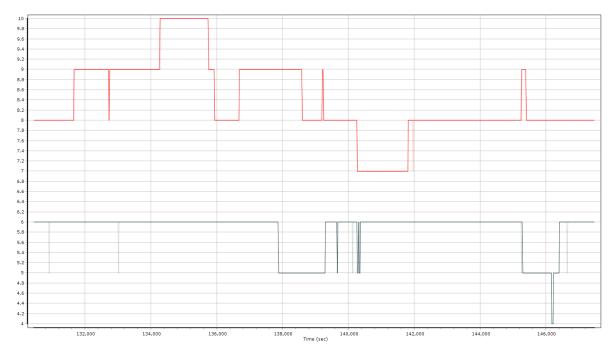




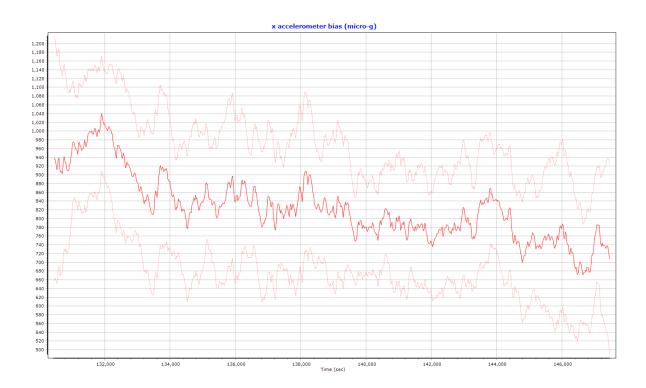
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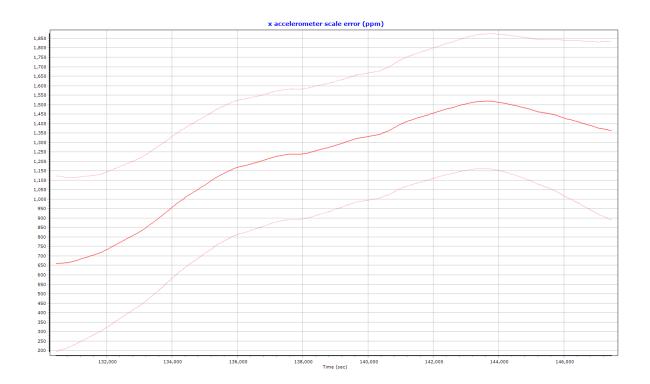


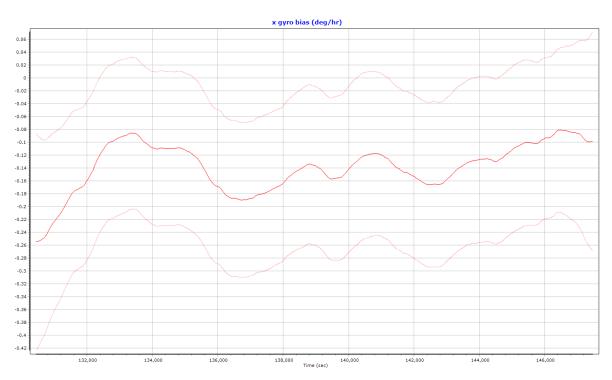
 $\boxed{ \color{red} - \text{North Position Error RMS (m)} - \text{East Position Error RMS (m)} - \text{Down Position Error RMS (m)} }$

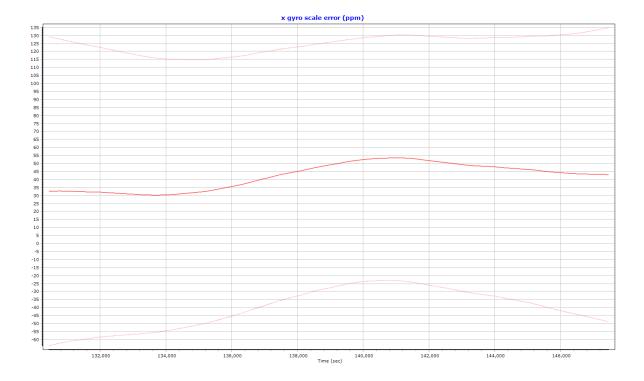


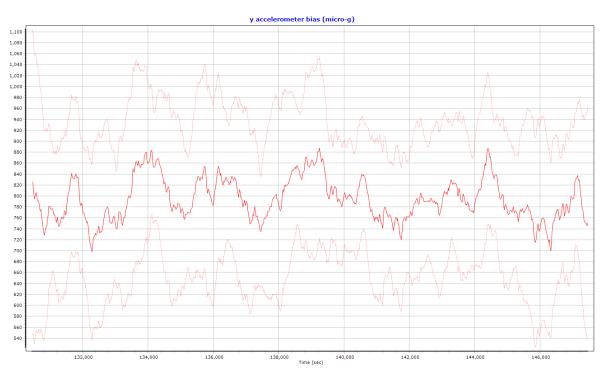
— Number of GPS Satellites — Number of GLONASS Satellites

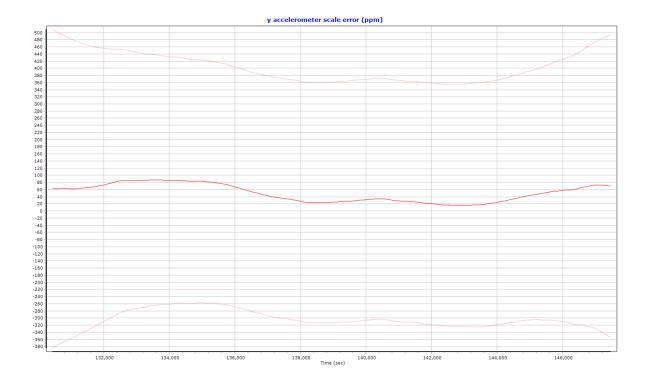


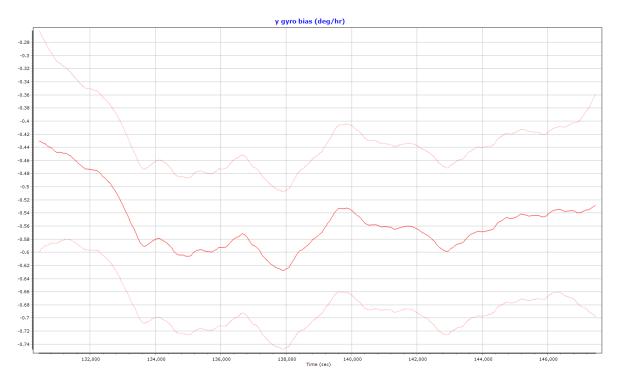


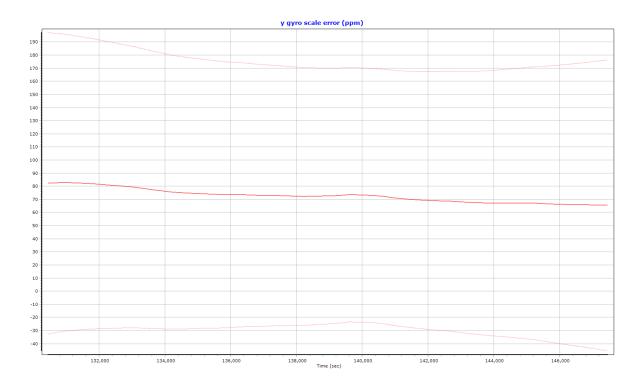




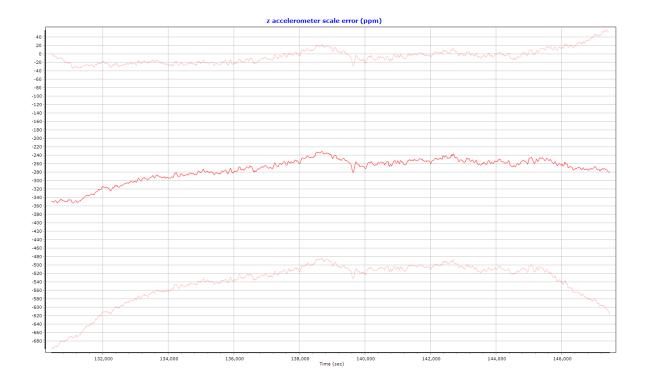


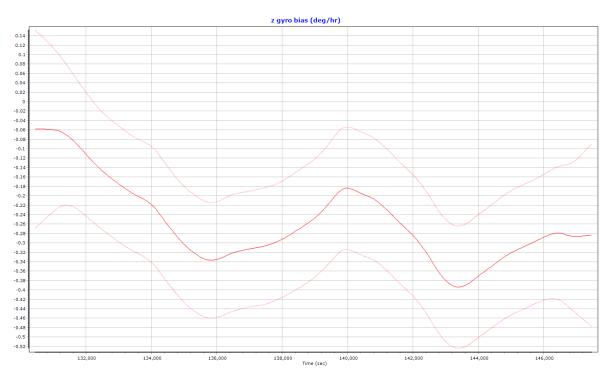


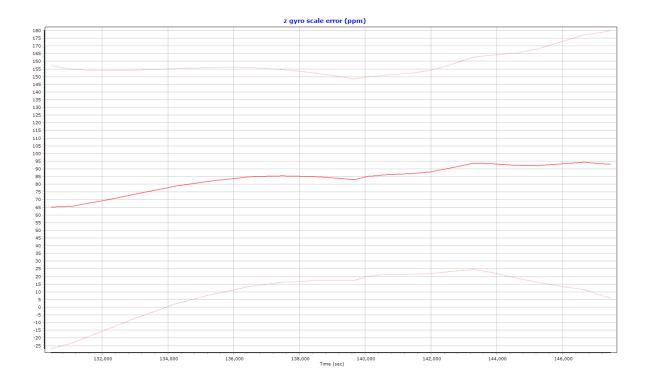




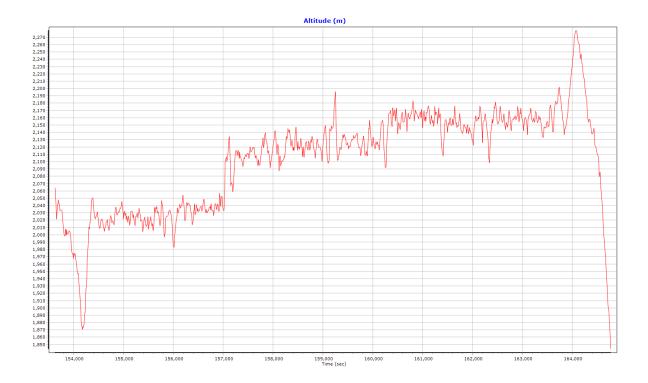


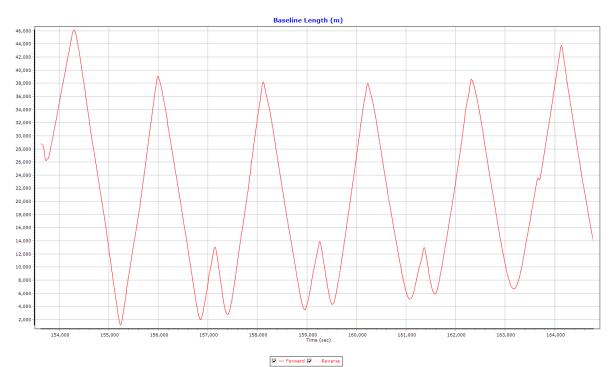


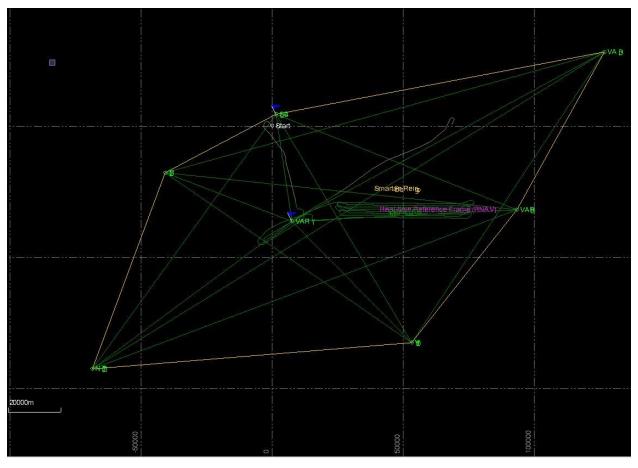




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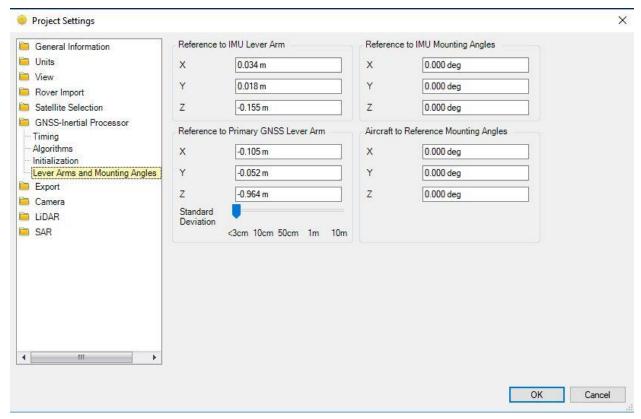


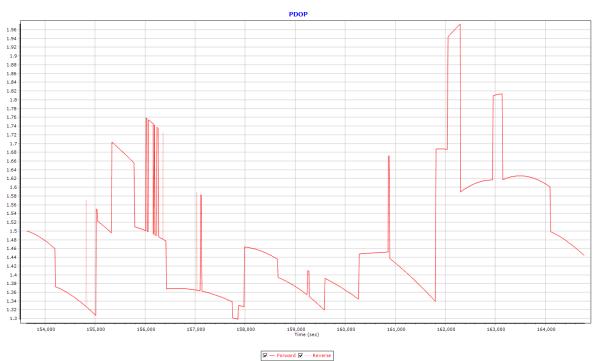


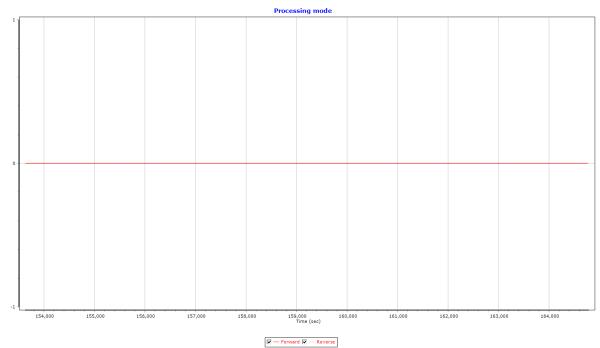




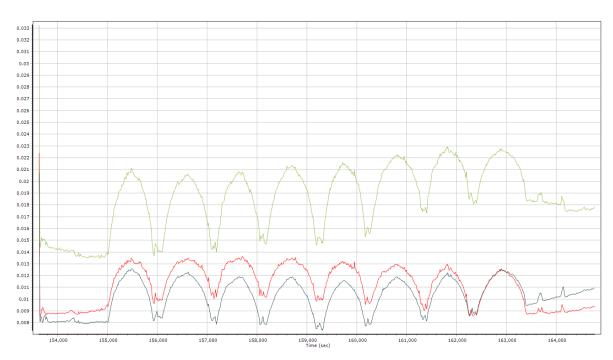
— North (m) — East (m) — Down (m) → DR mode

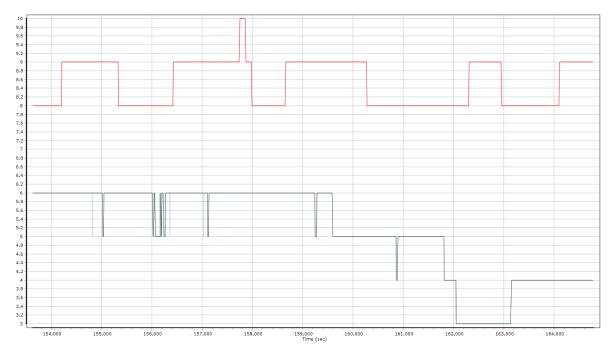




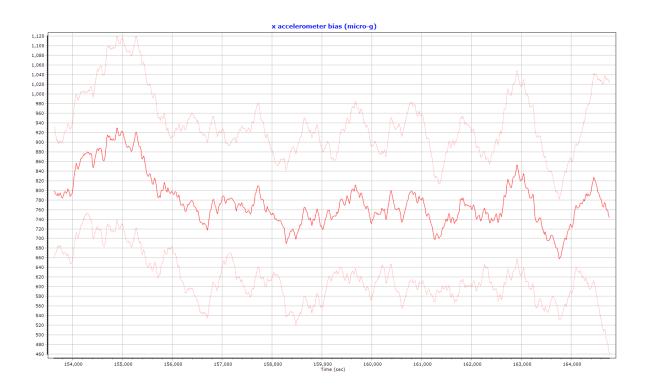


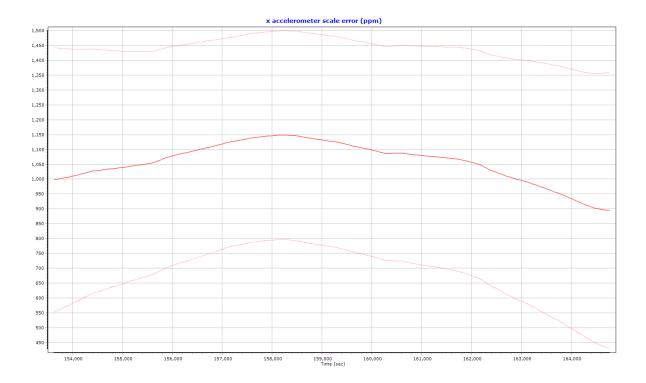
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

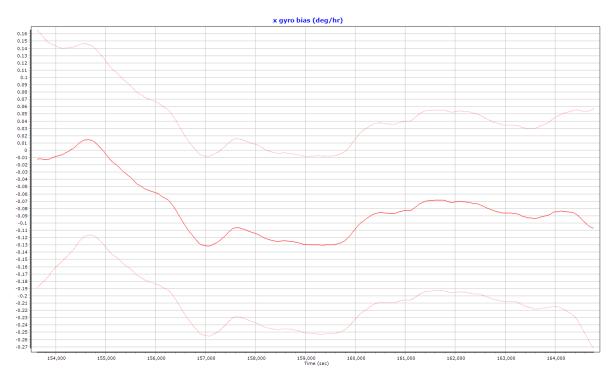


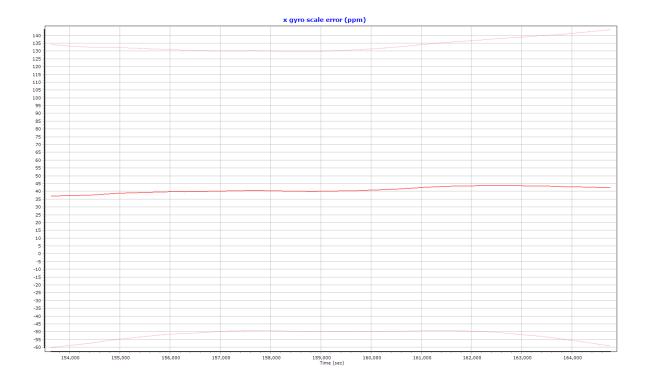


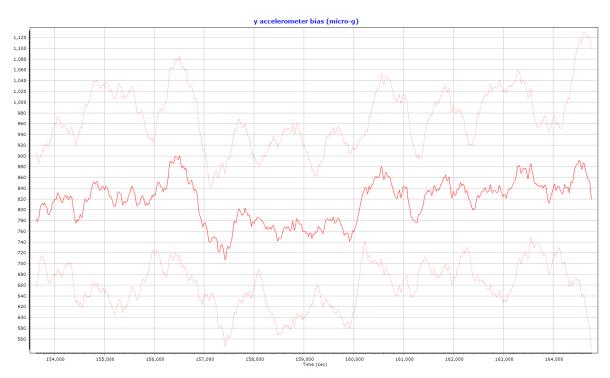
— Number of GPS Satellites — Number of GLONASS Satellites

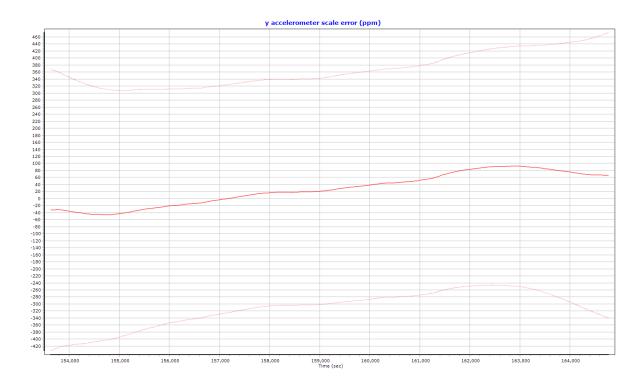


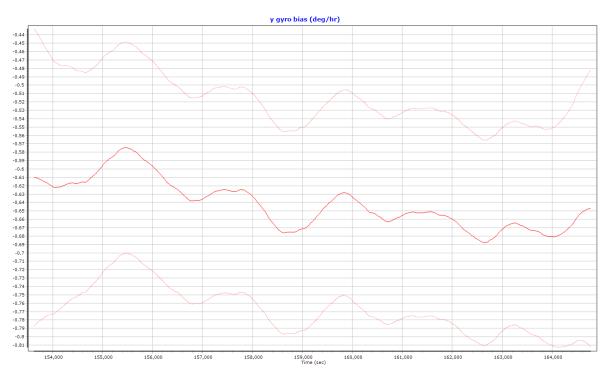


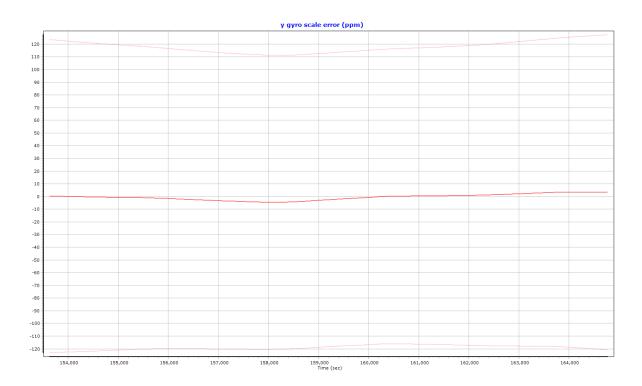


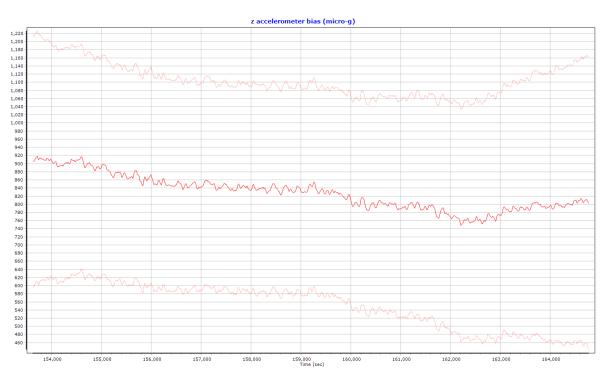


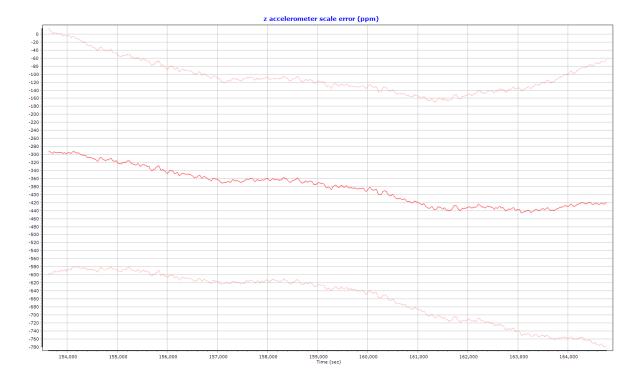


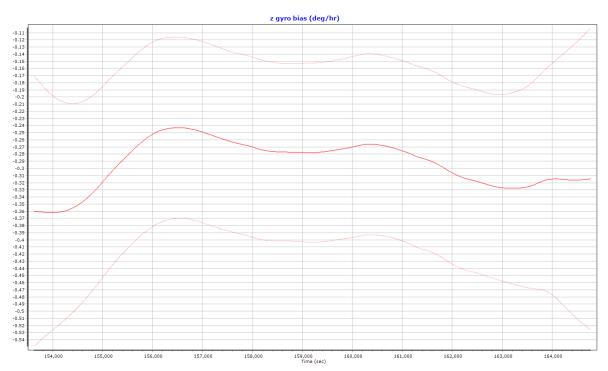


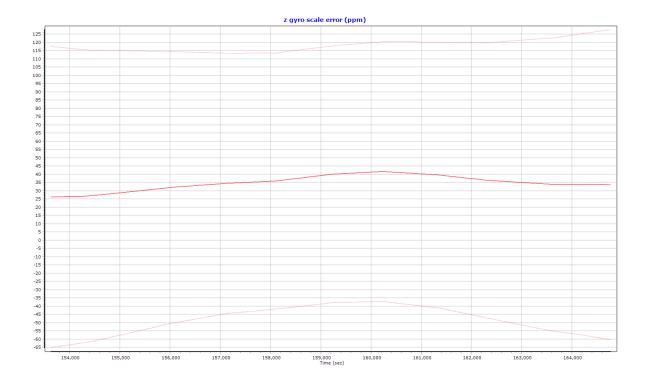




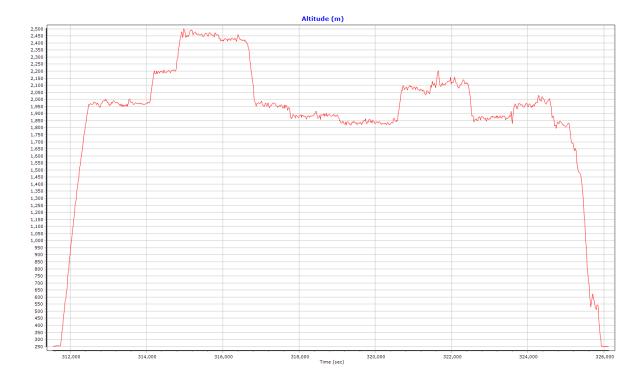


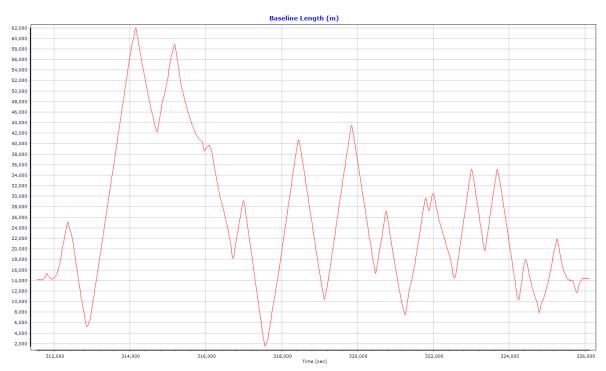


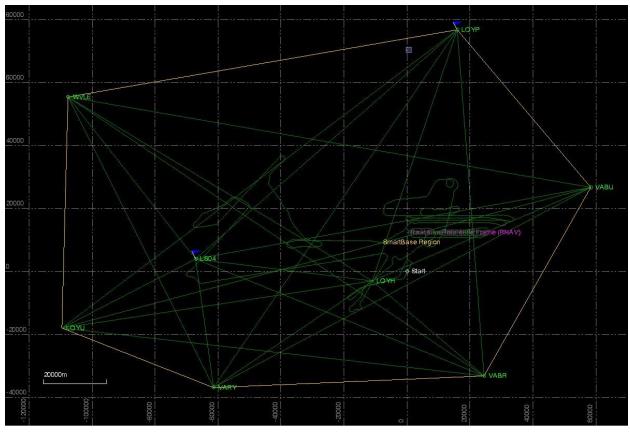




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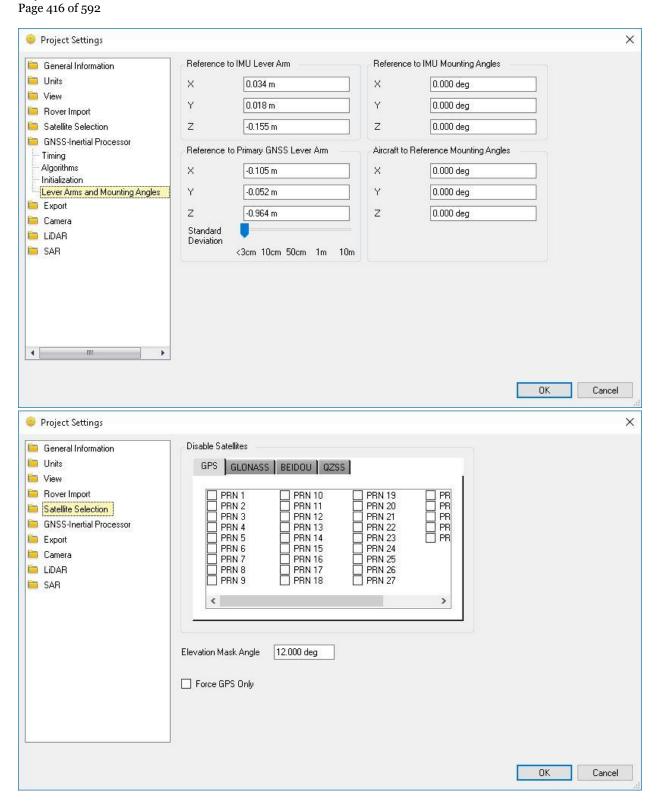


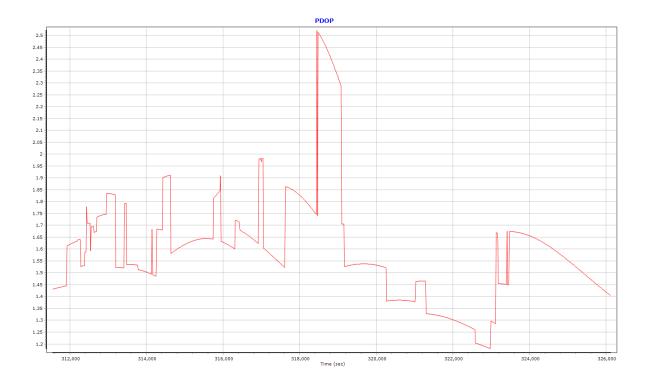


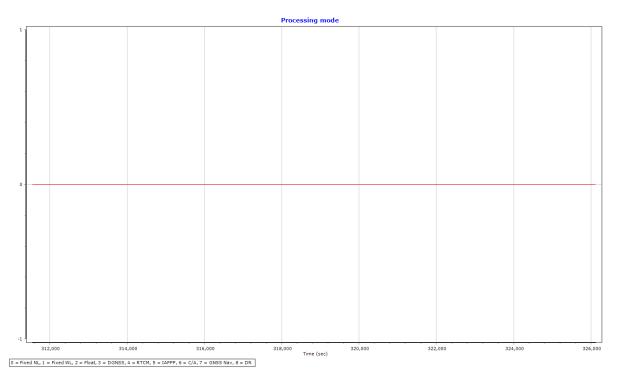


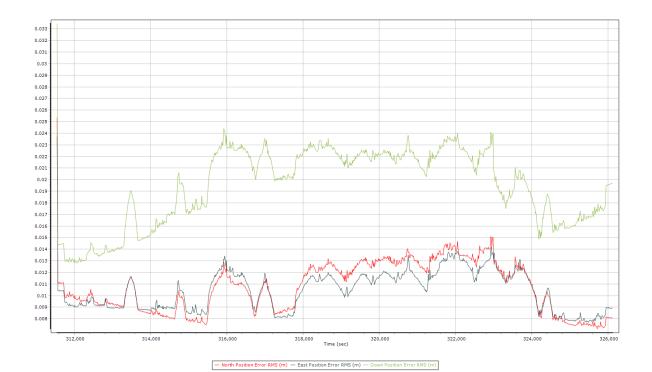


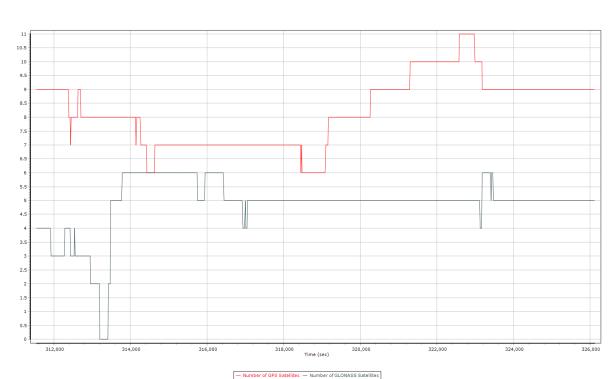
— North (m) — East (m) — Down (m) → DR mode

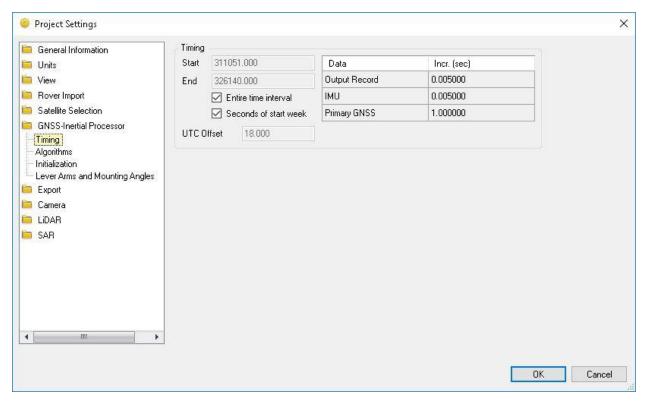




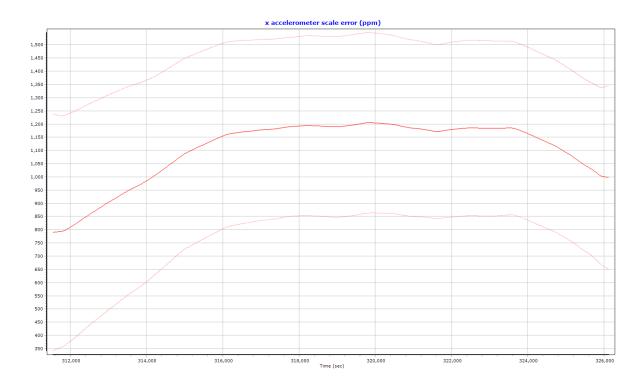


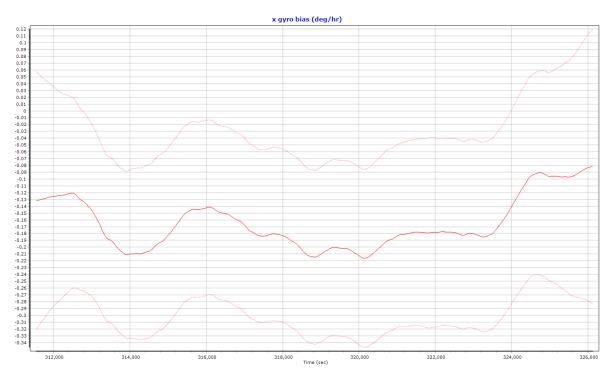


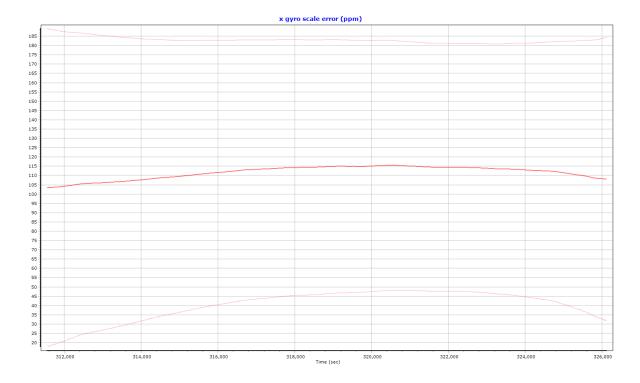




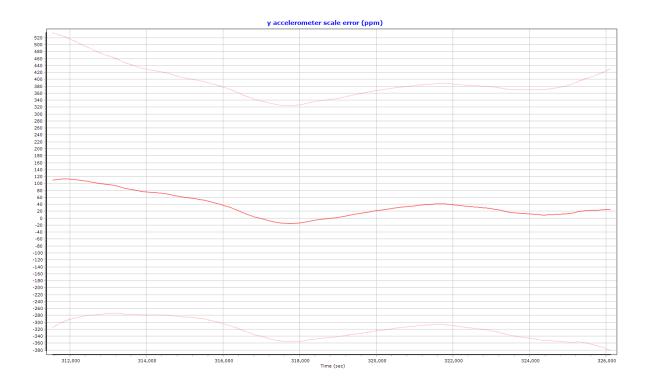


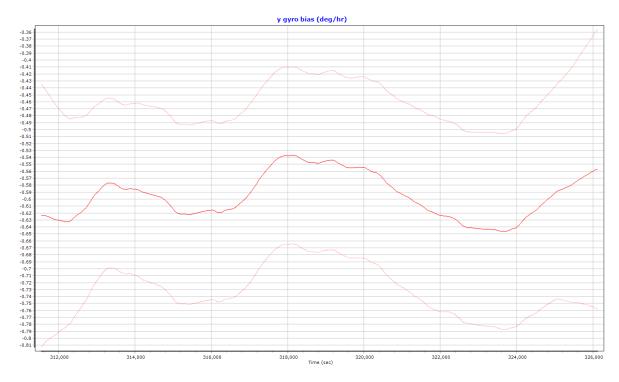


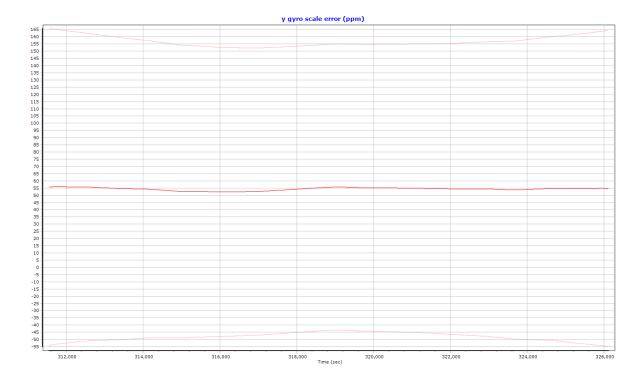




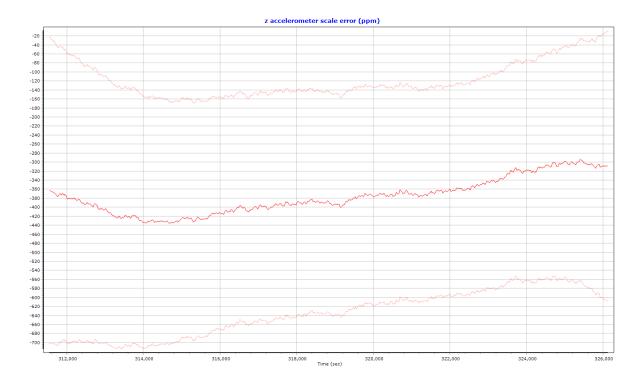


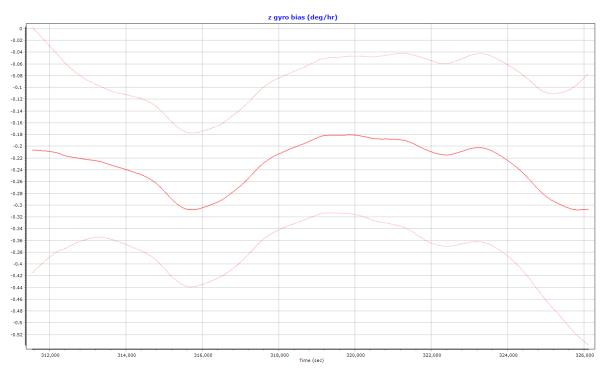


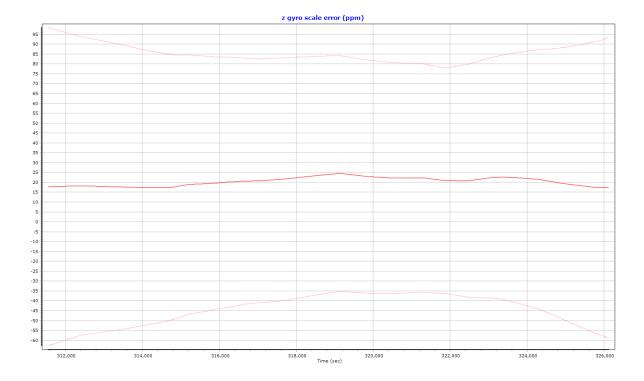


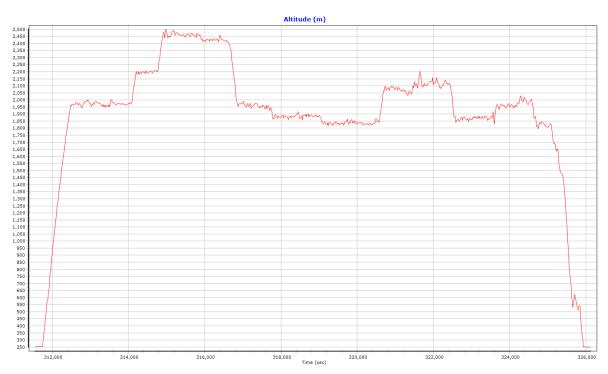


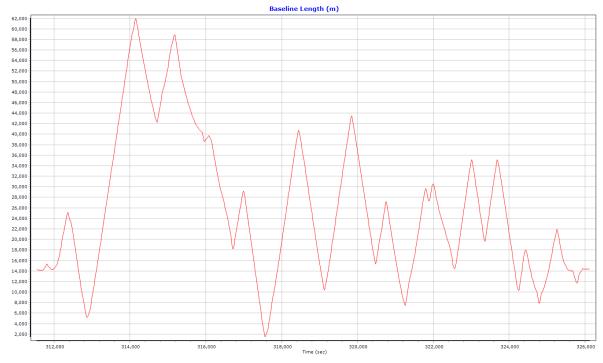


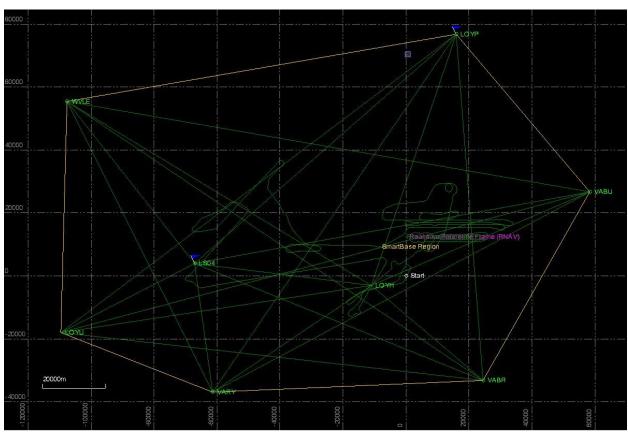




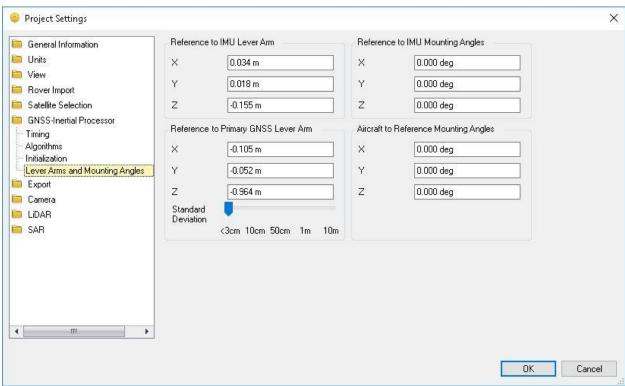


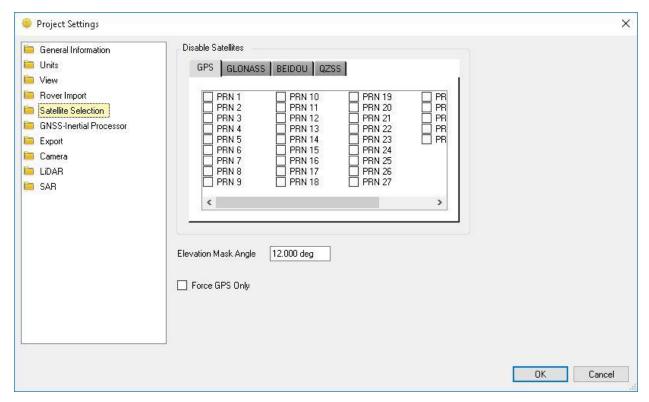




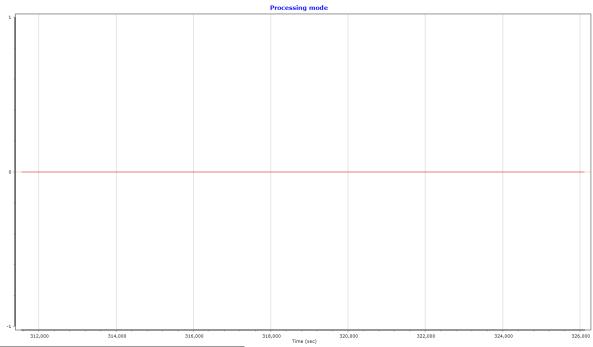




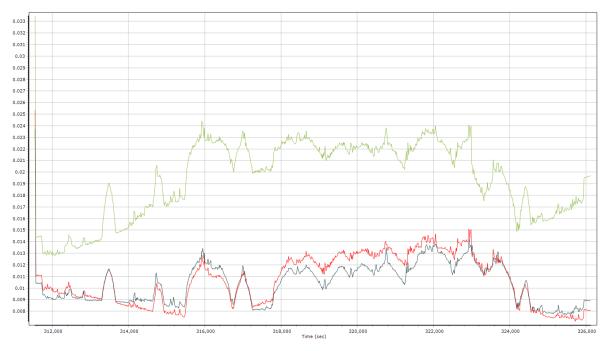


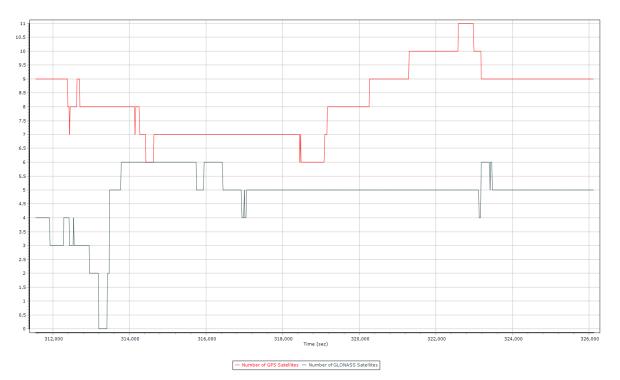


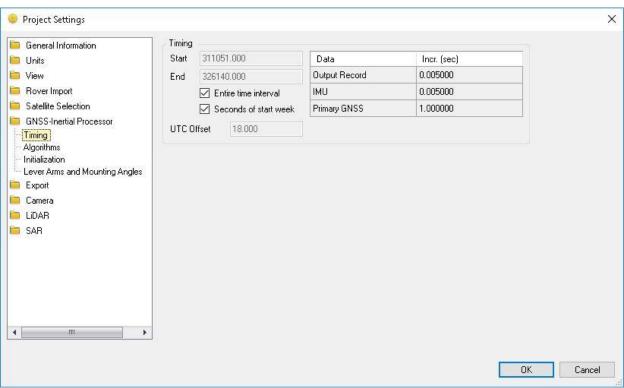


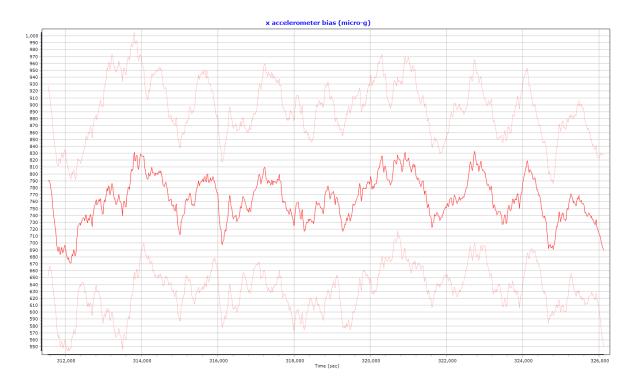


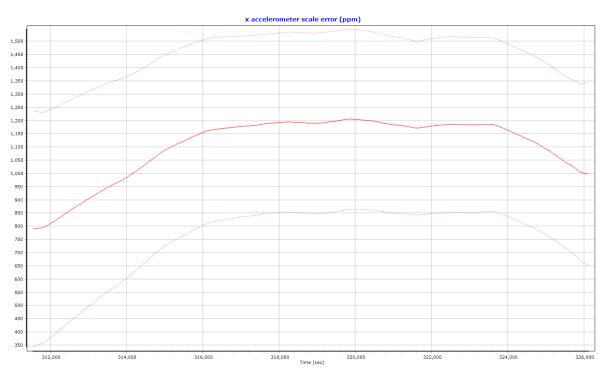


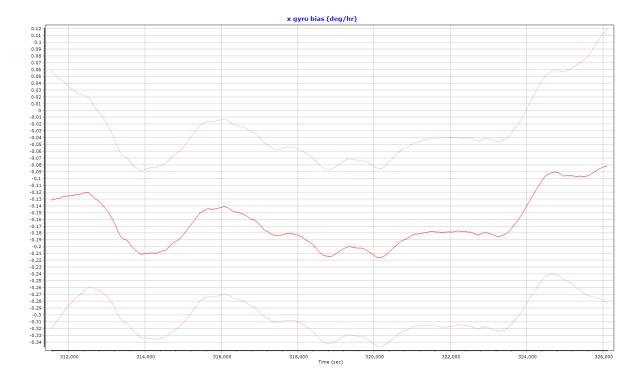


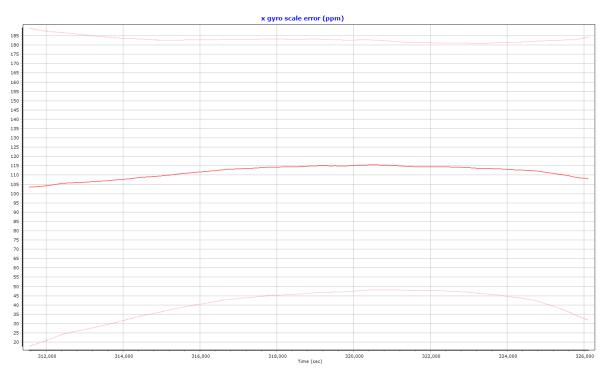


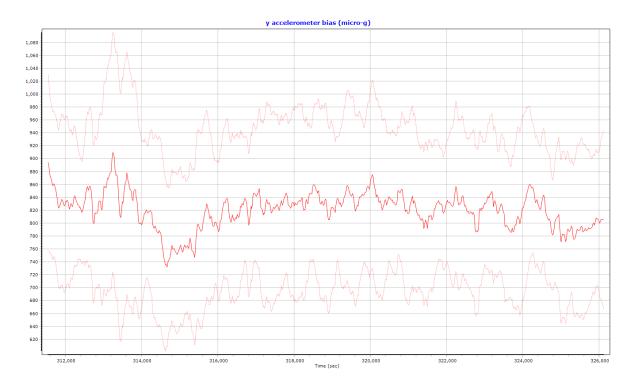


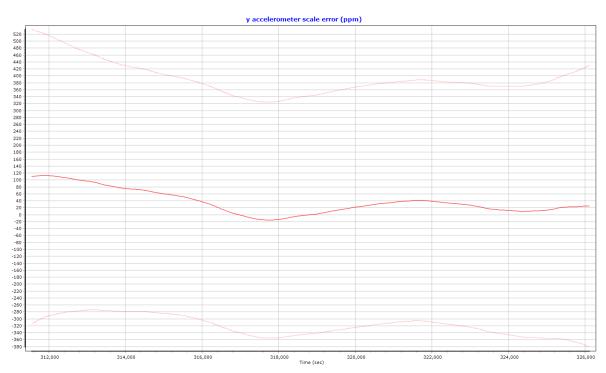


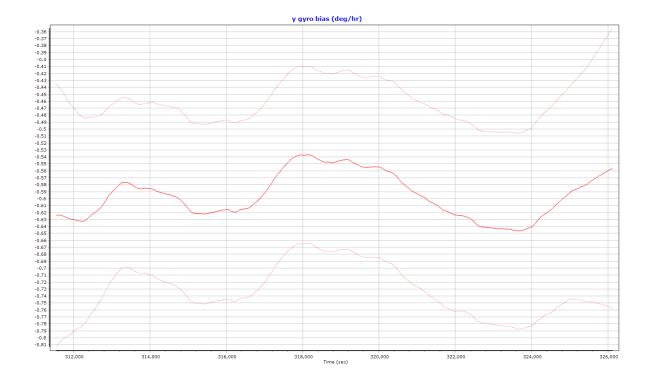


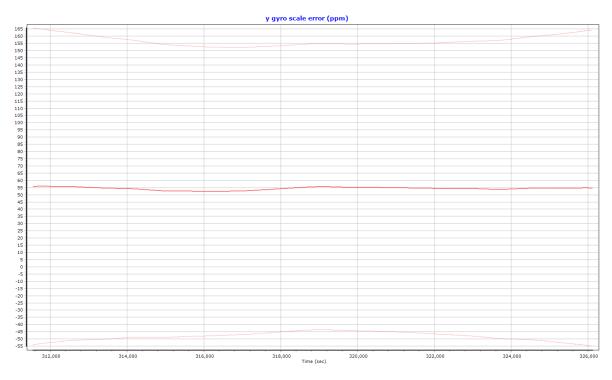


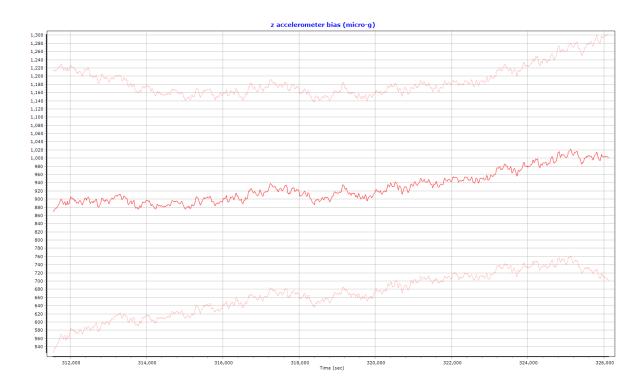


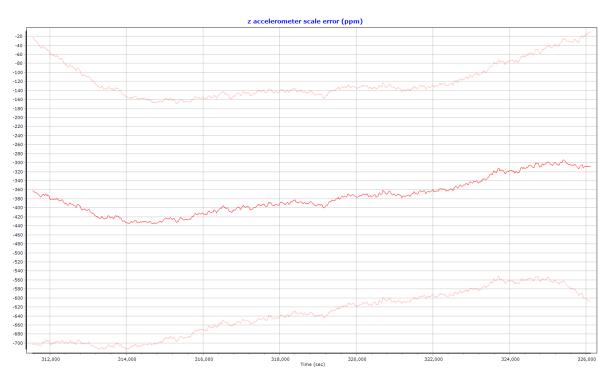


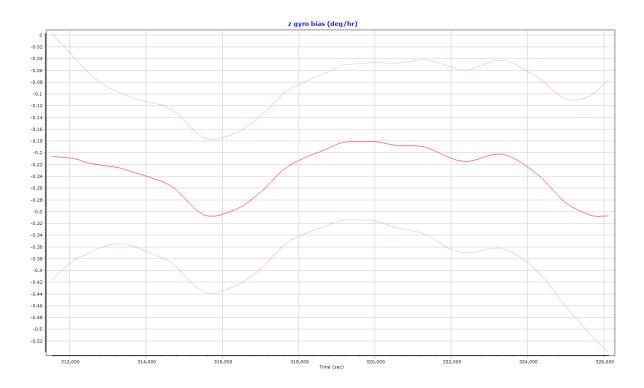


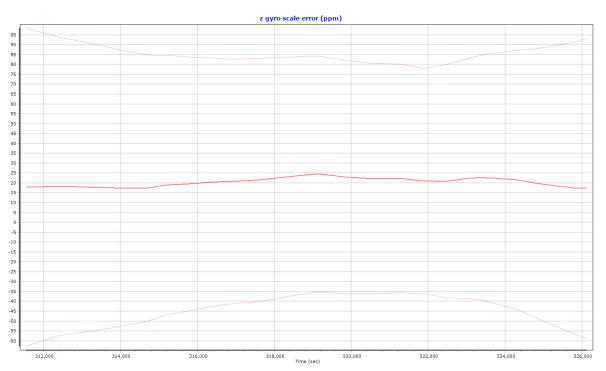


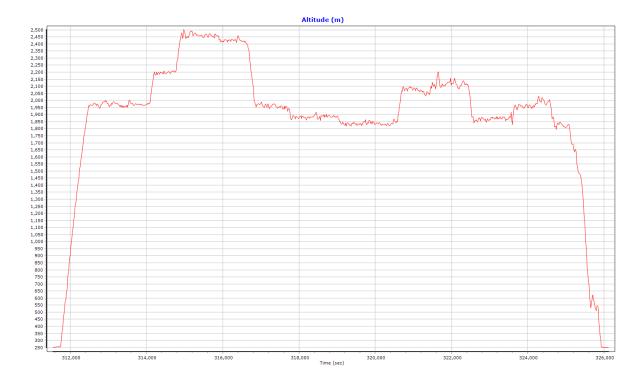


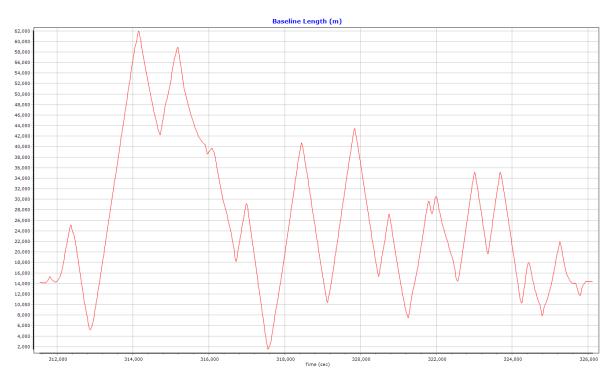


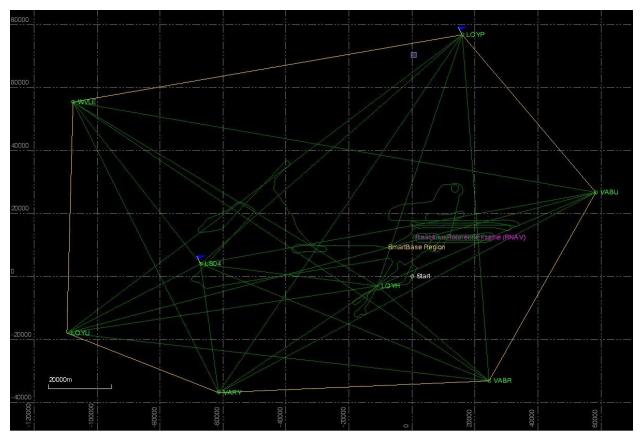




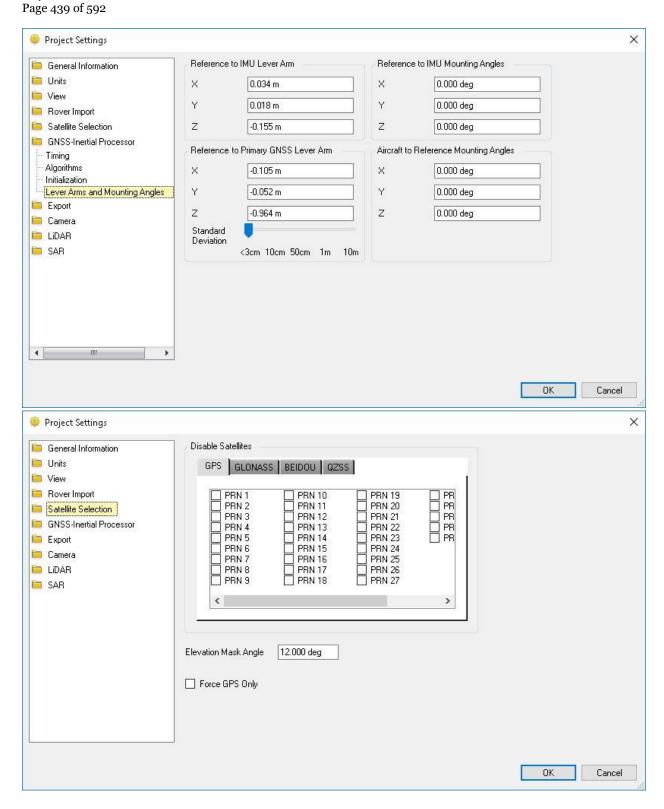


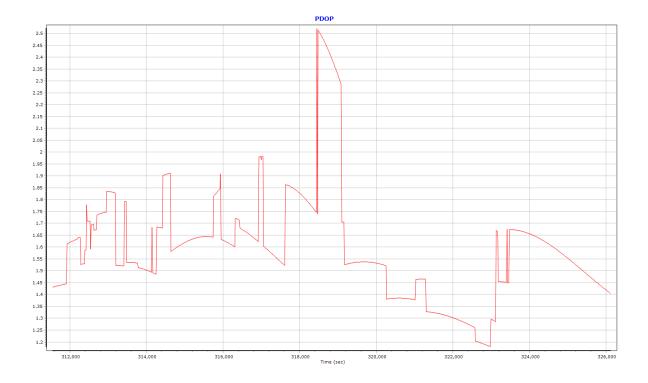


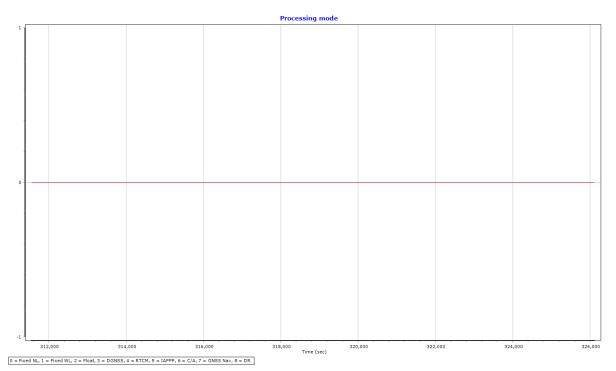




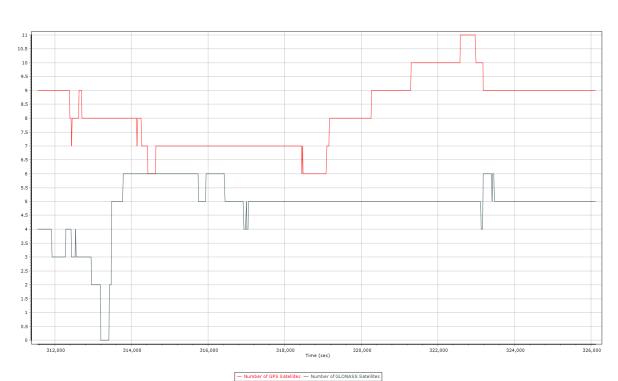


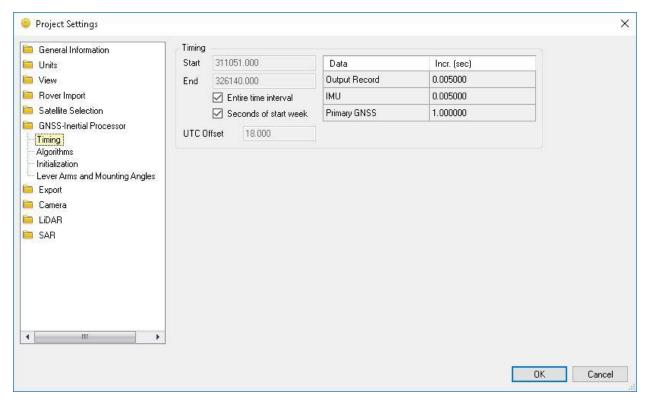




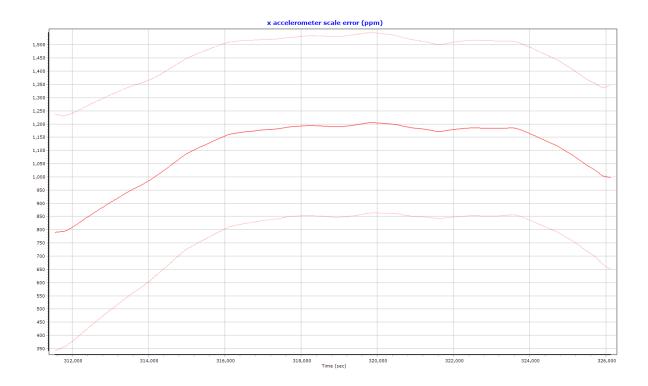


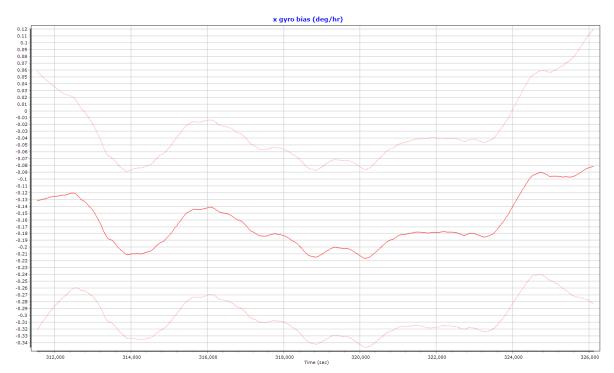


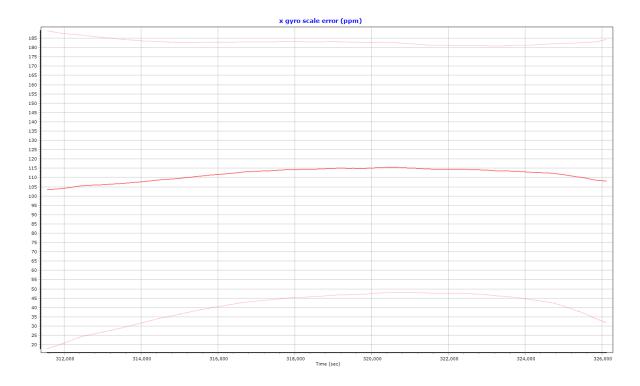


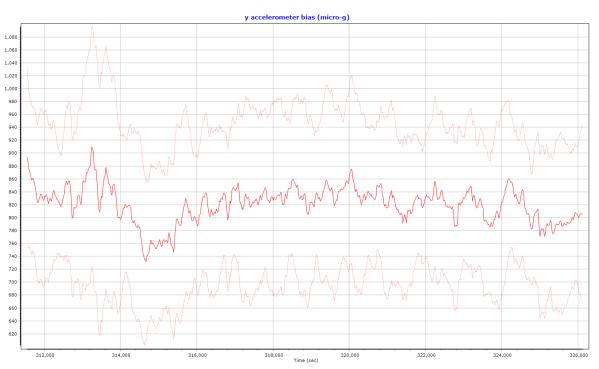


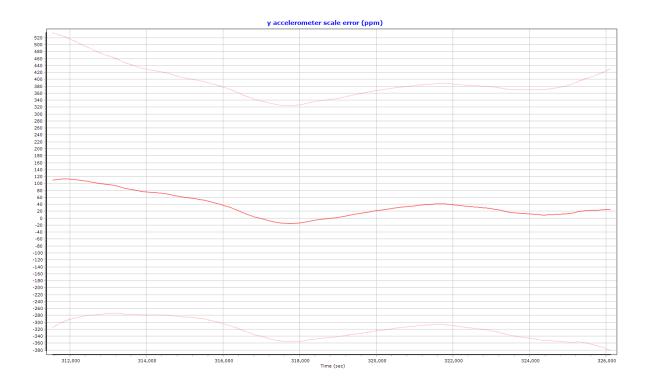


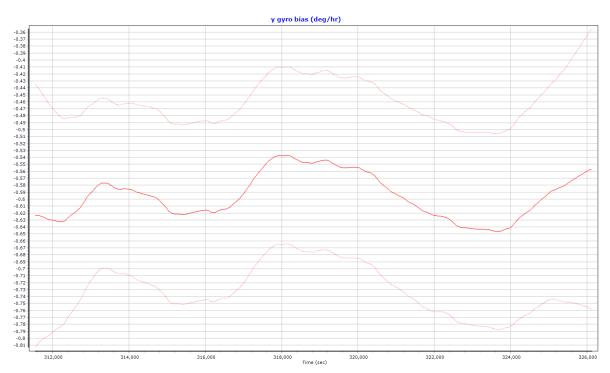


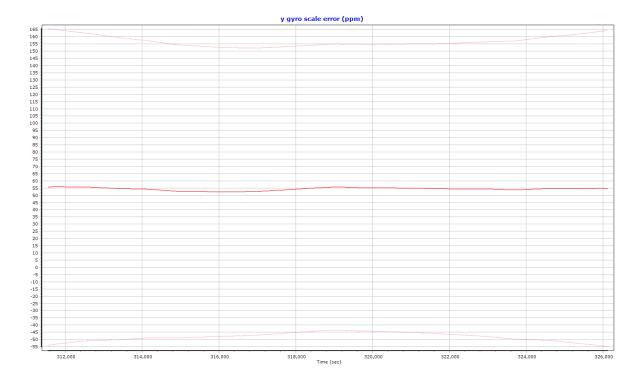


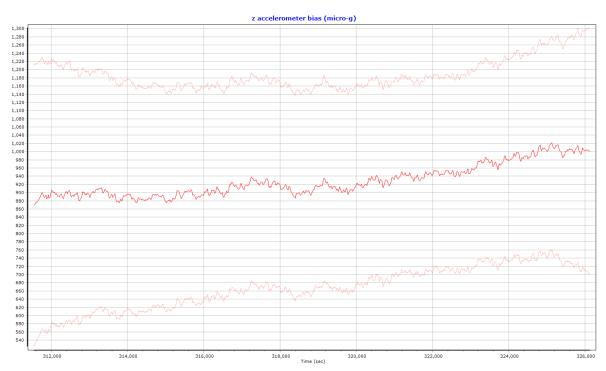


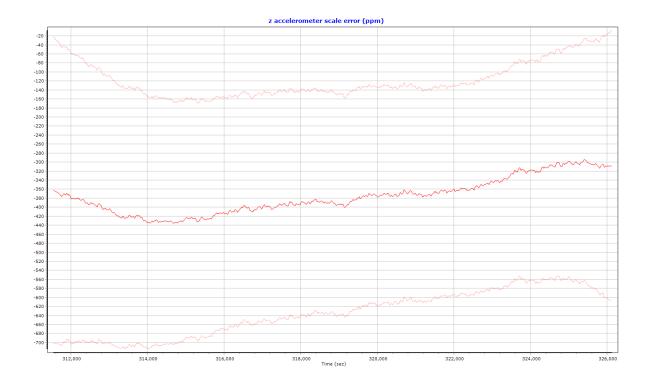


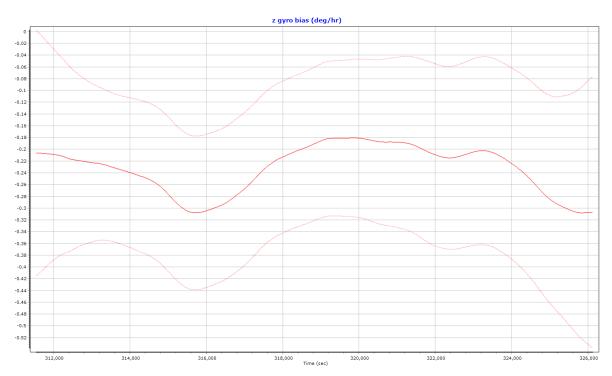


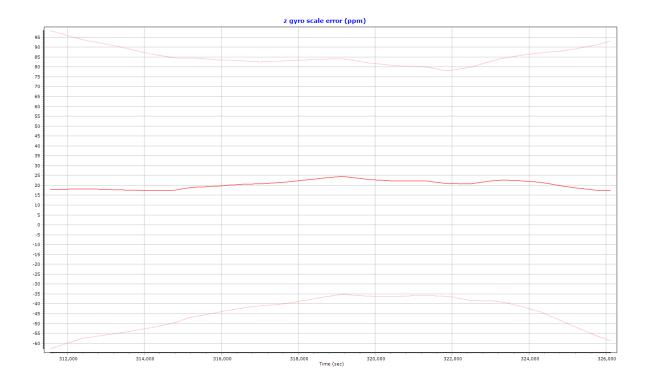




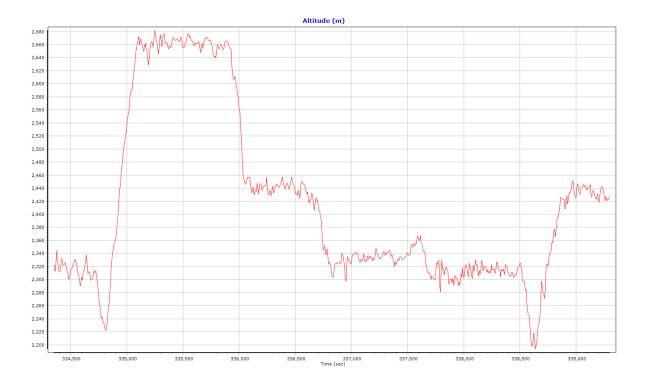


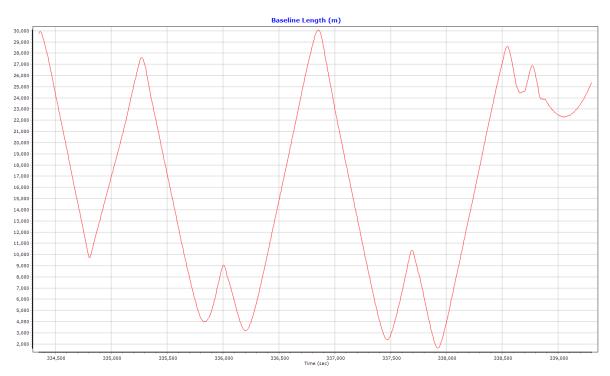


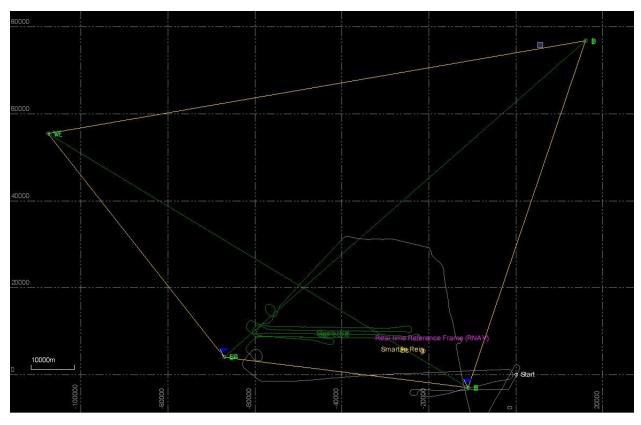


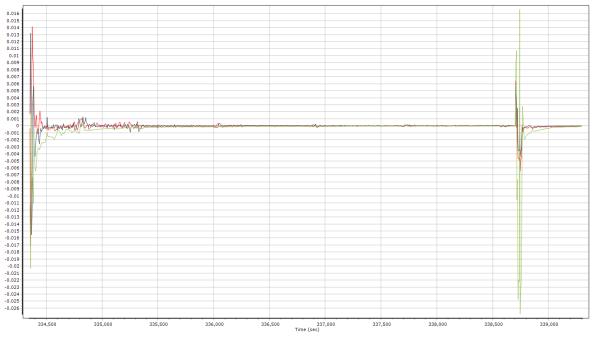


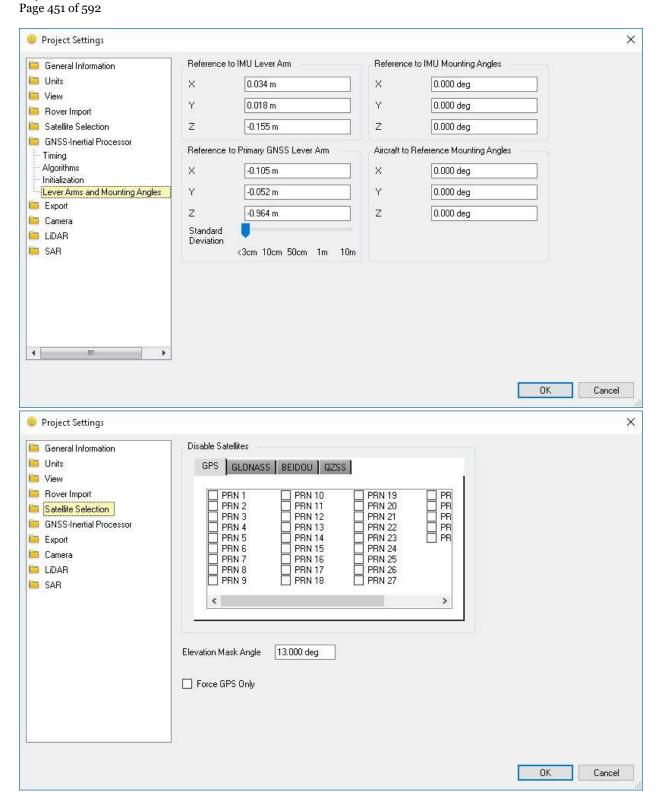
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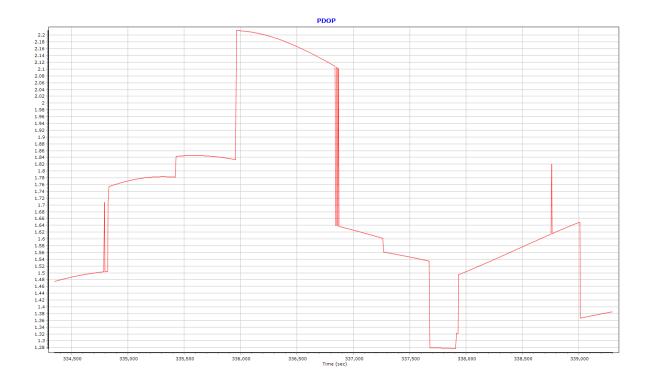


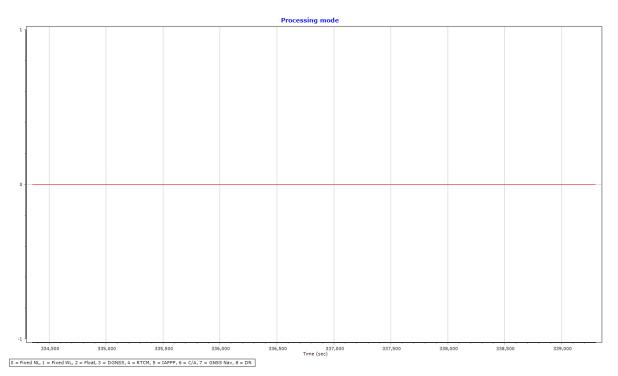


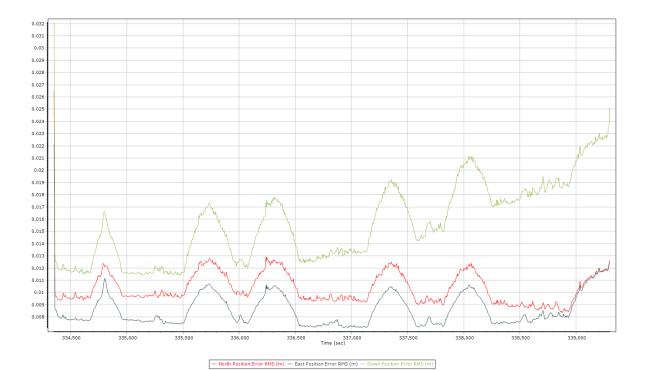


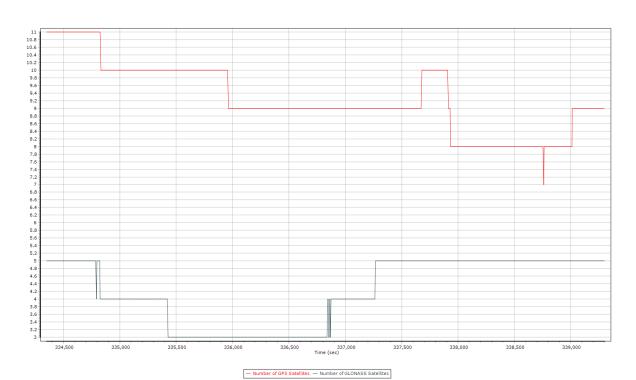


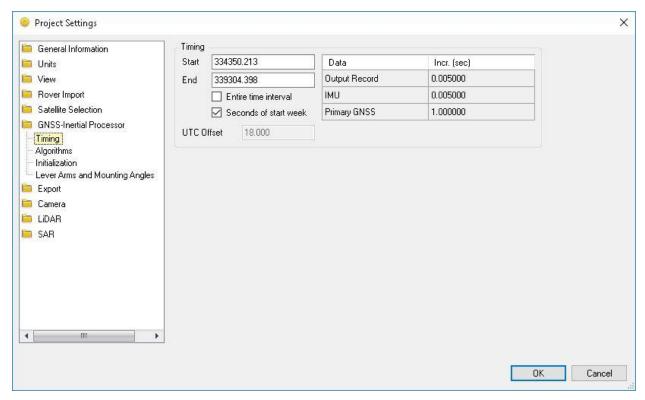




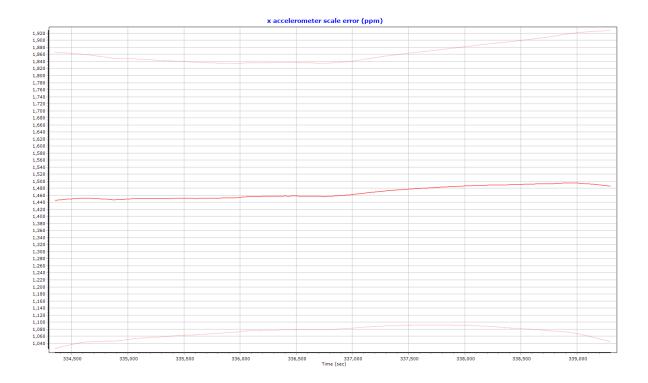


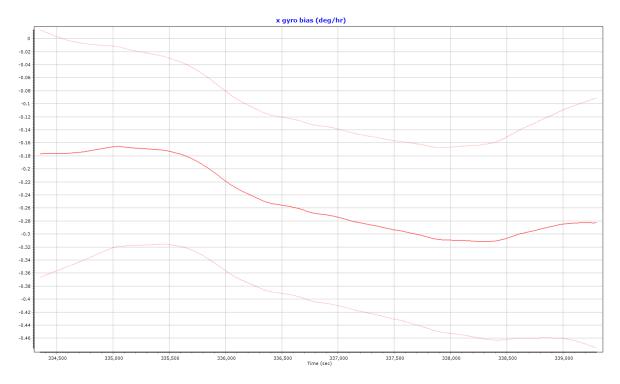


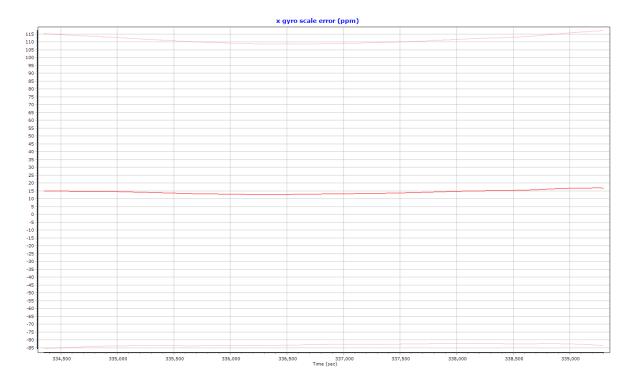


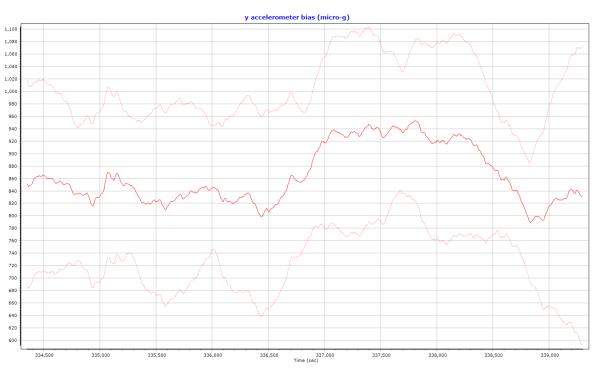


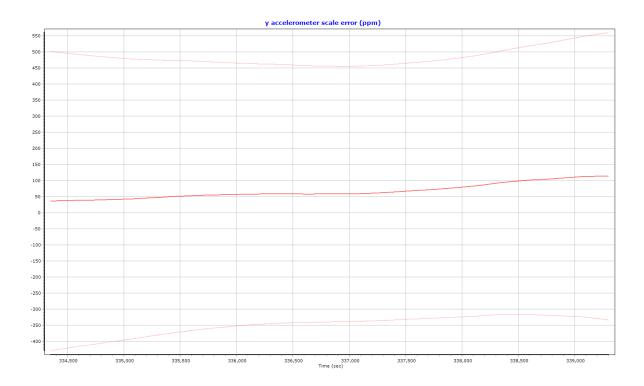


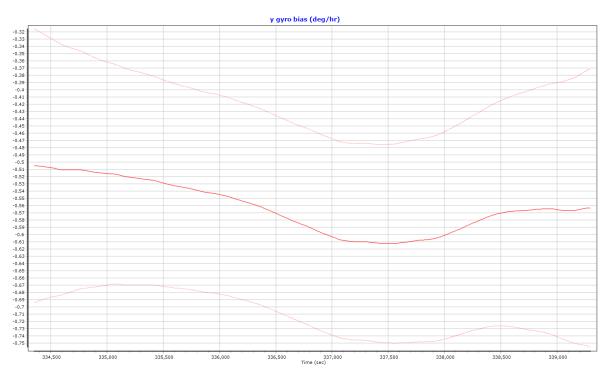


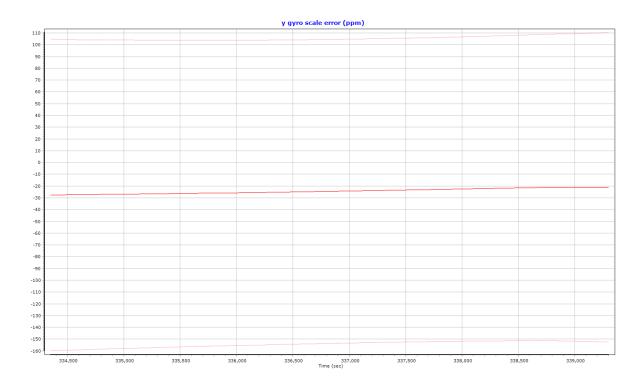




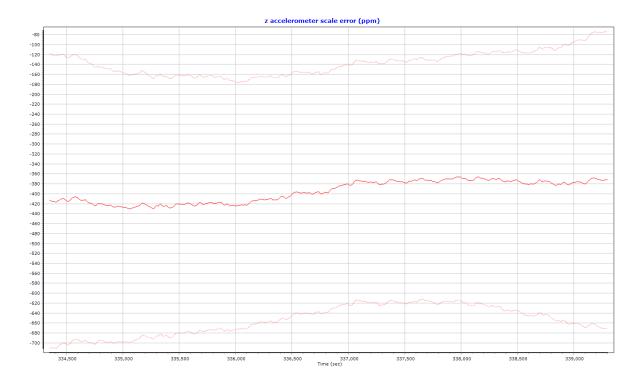


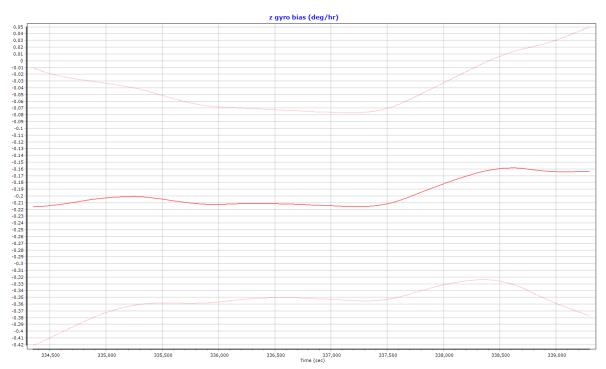


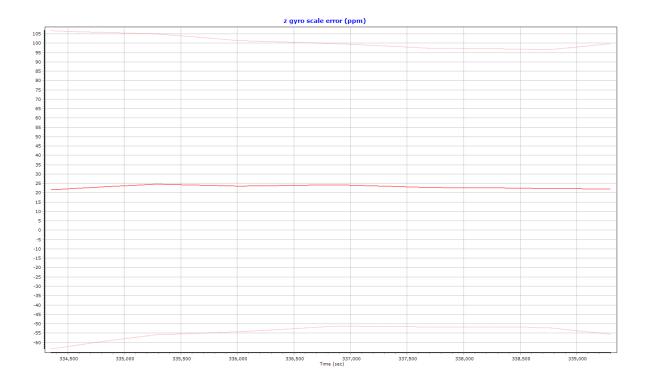




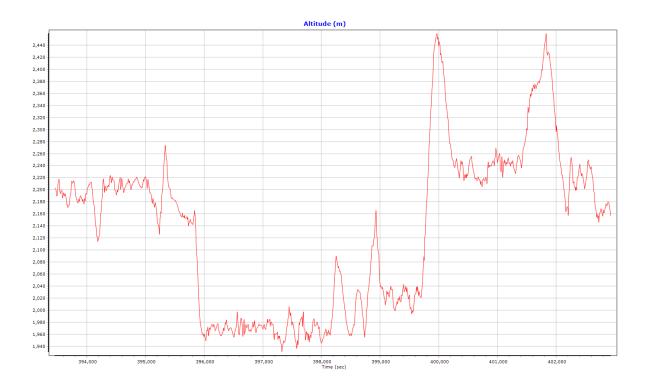


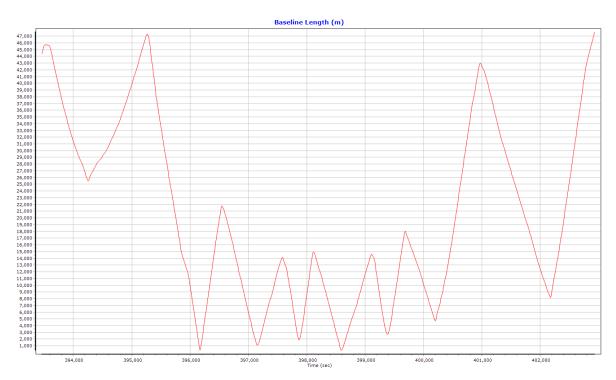


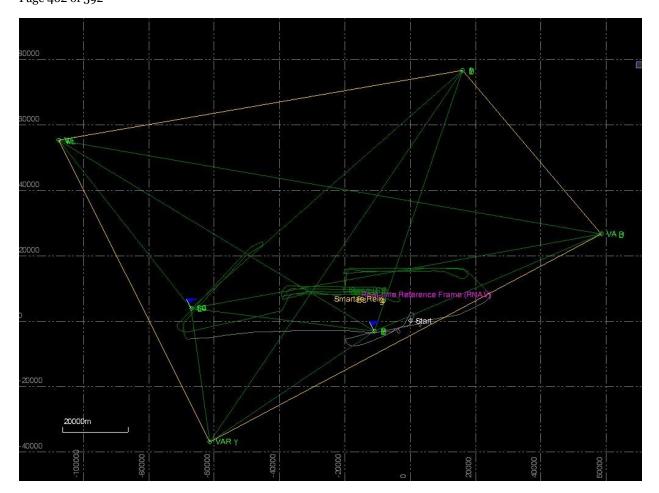




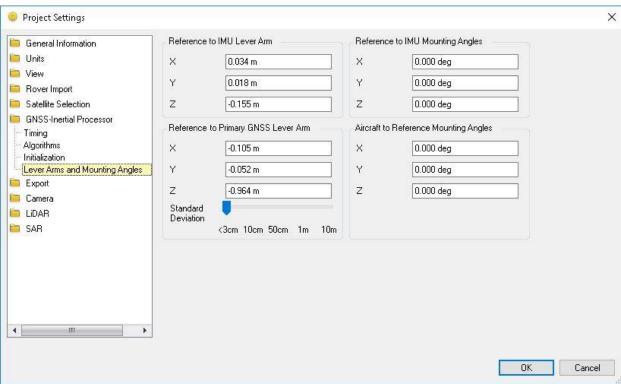
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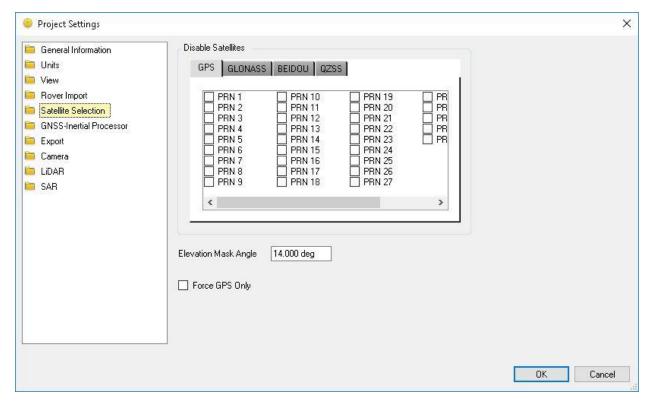










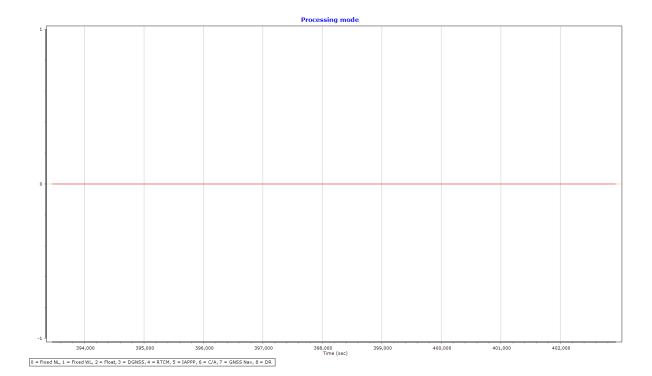


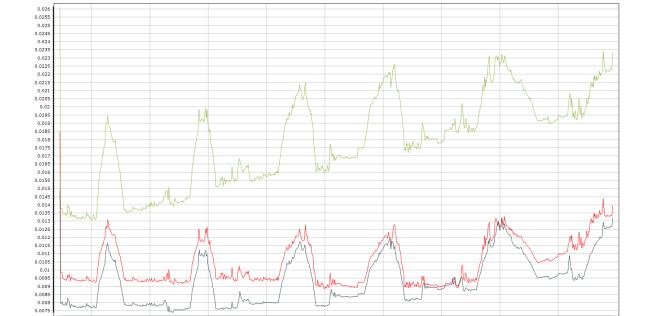


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395,000

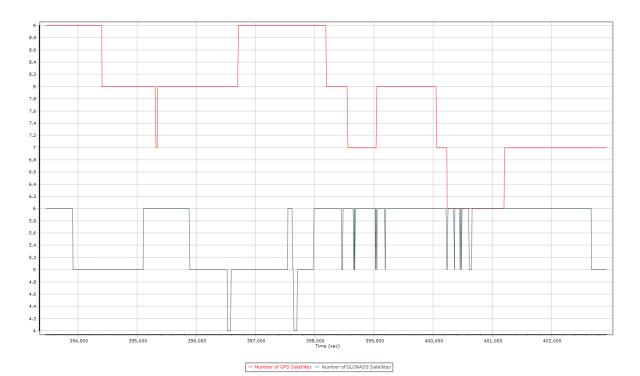
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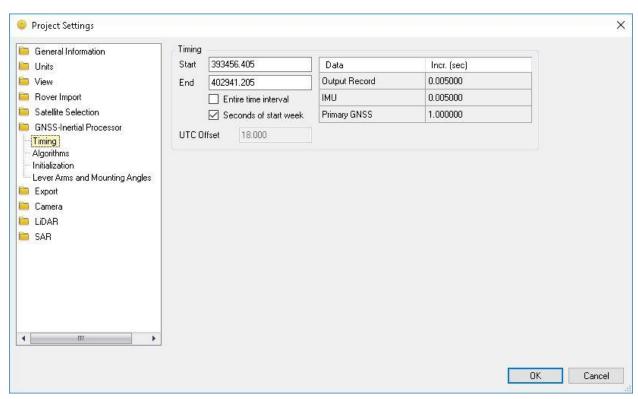


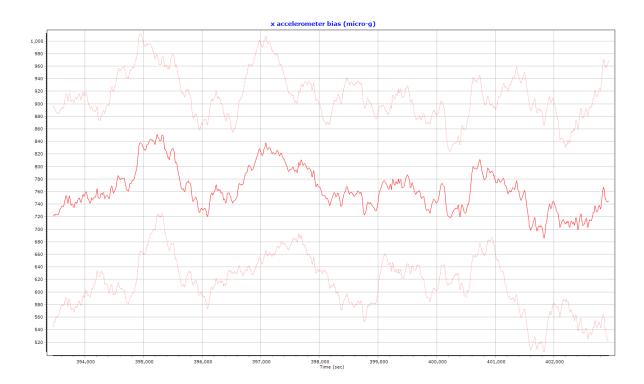


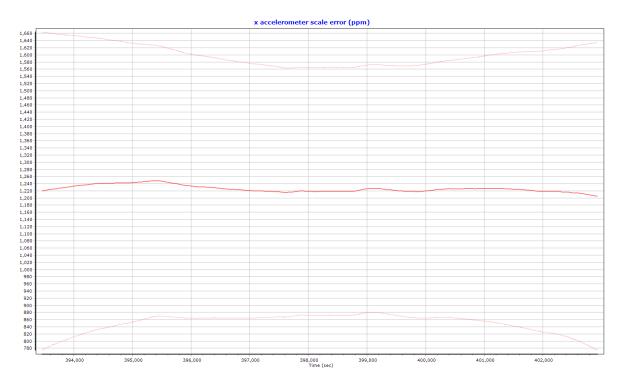
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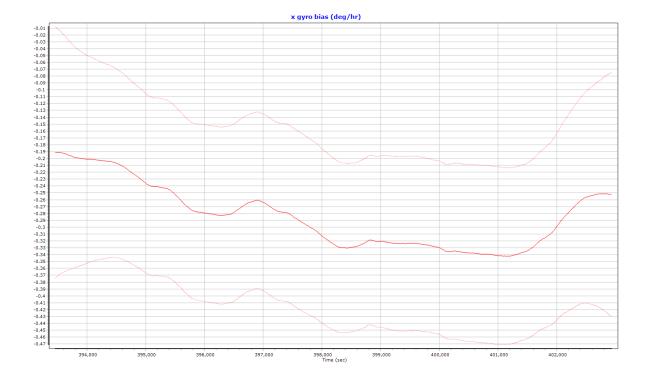
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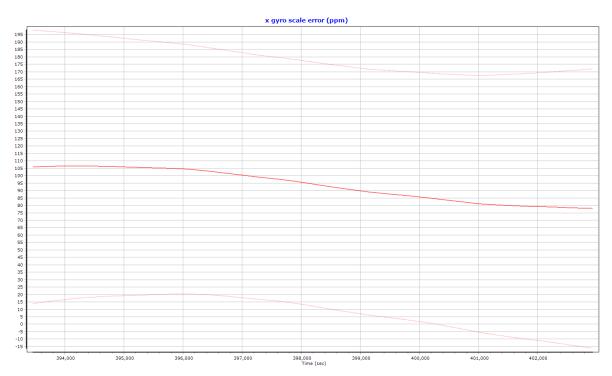


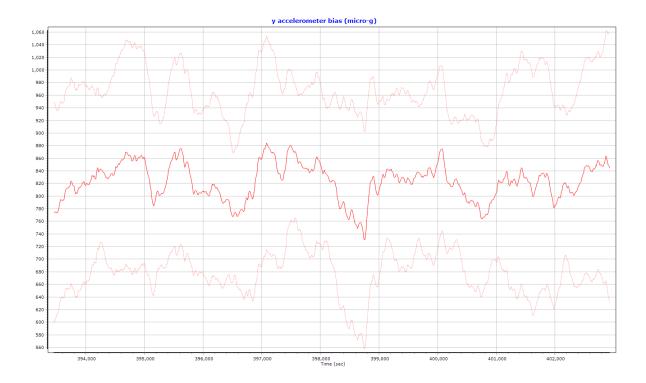


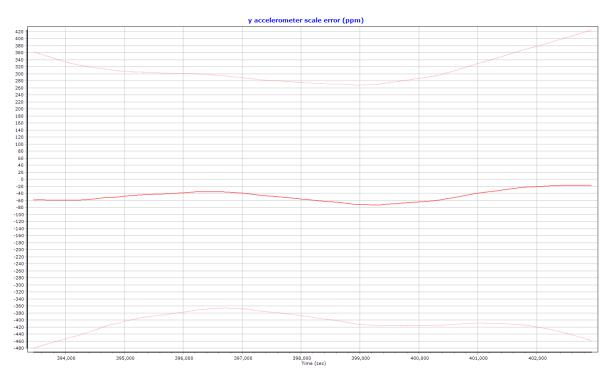


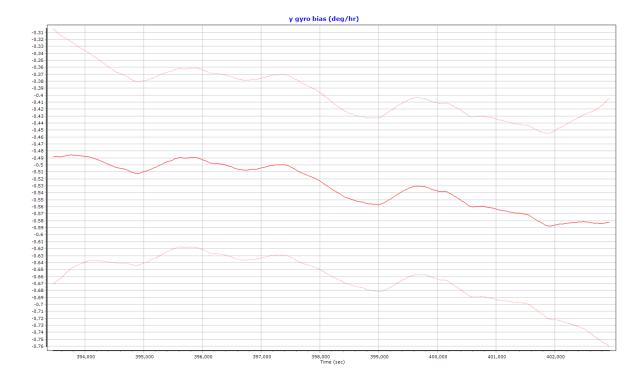


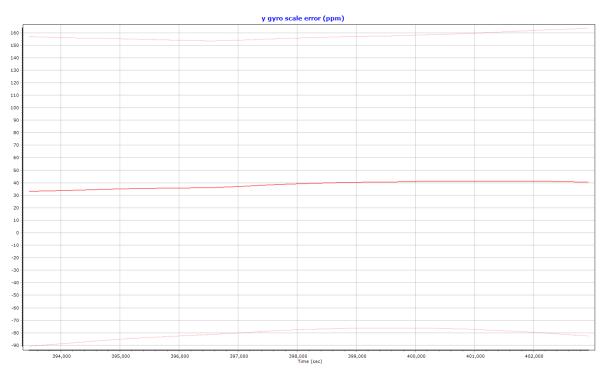


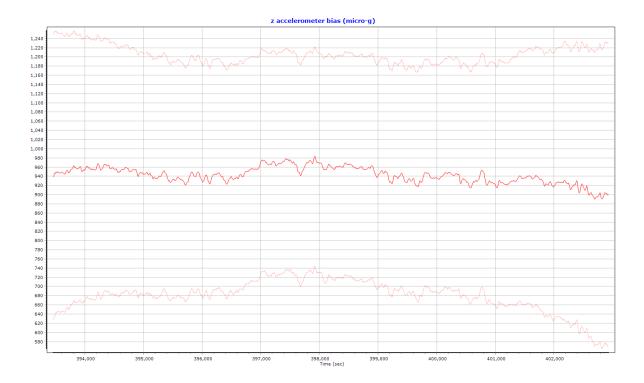


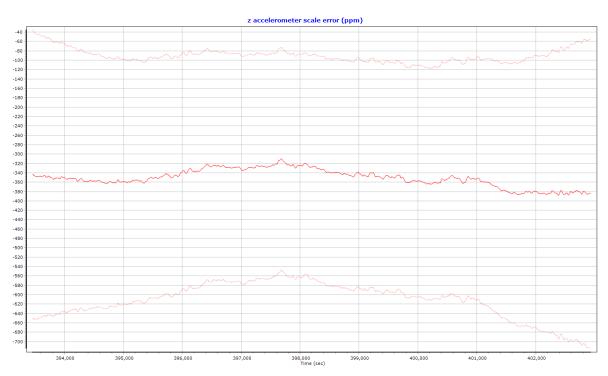


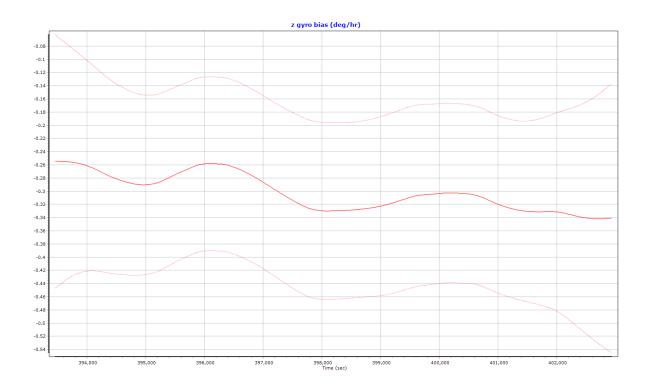


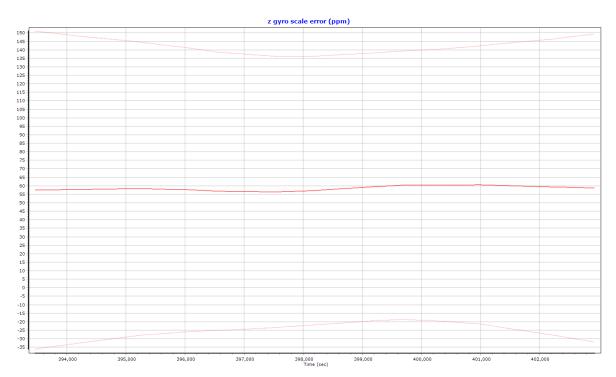


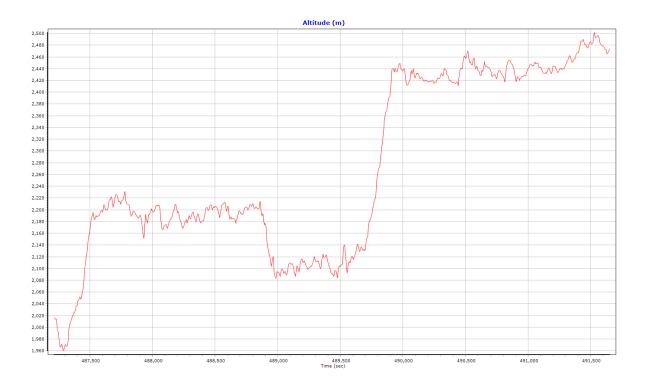


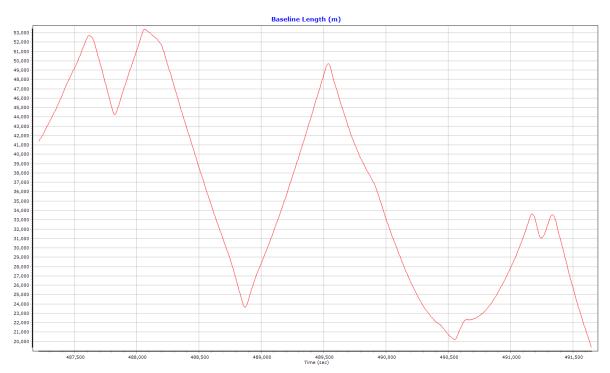


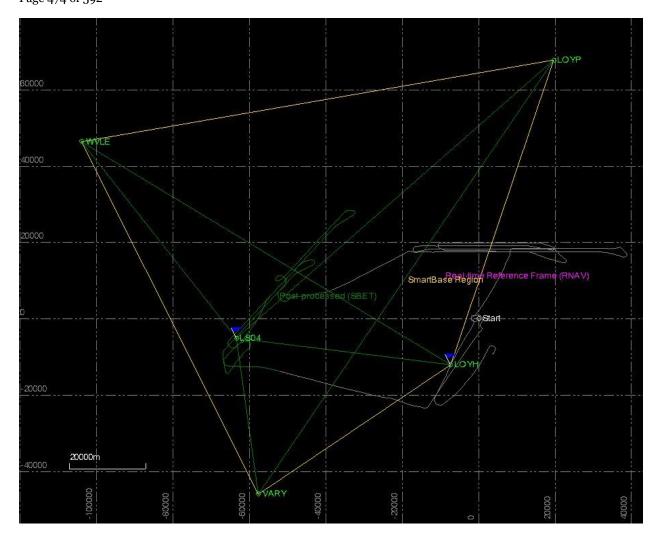


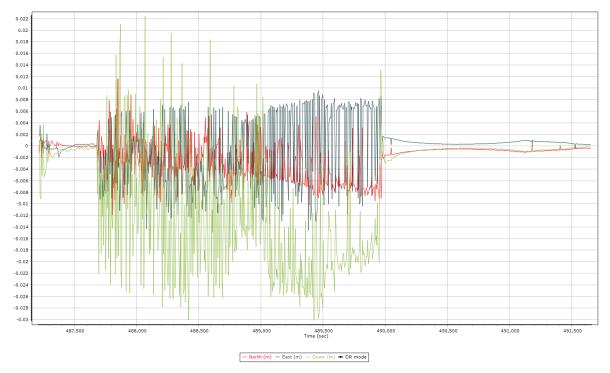


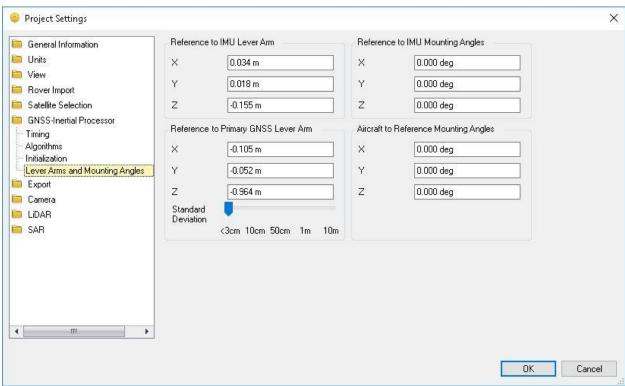


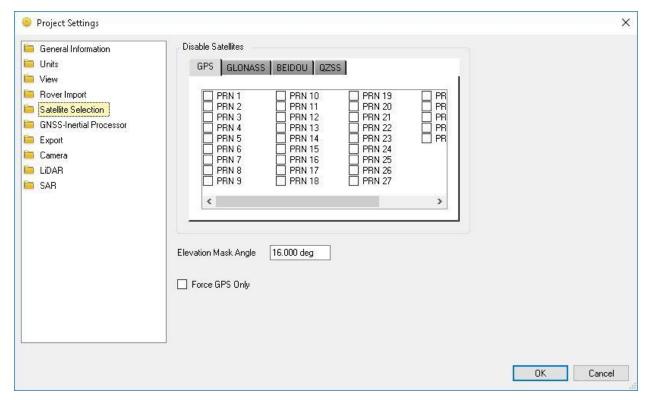


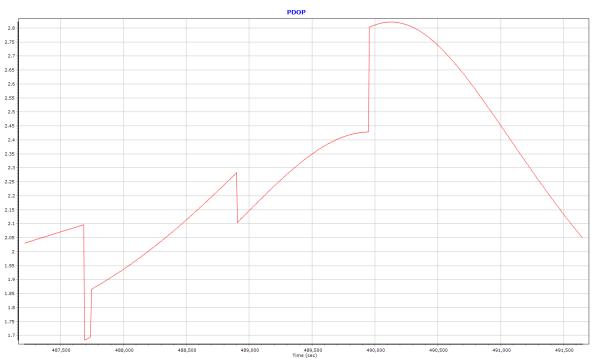


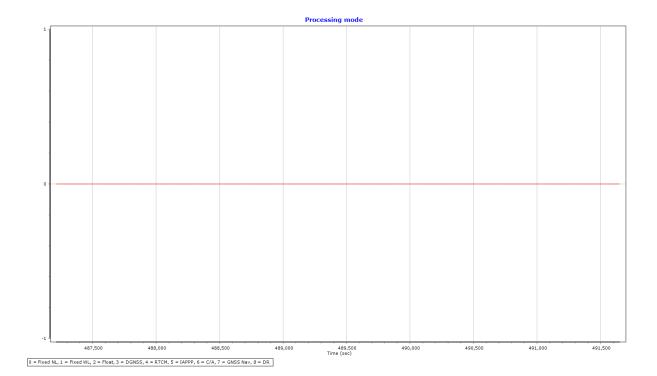


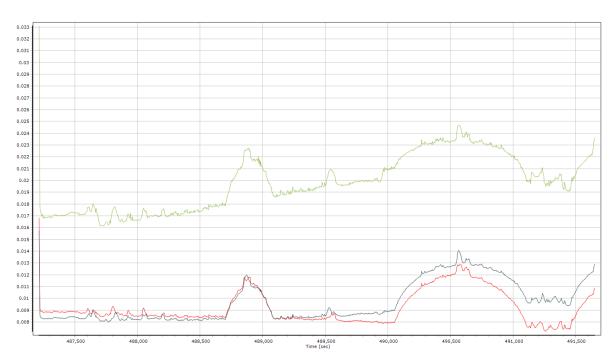


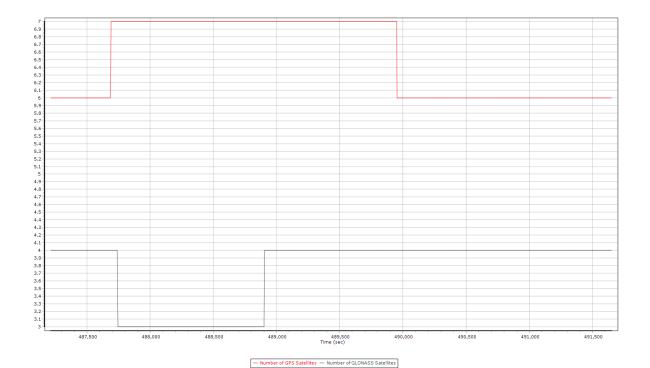


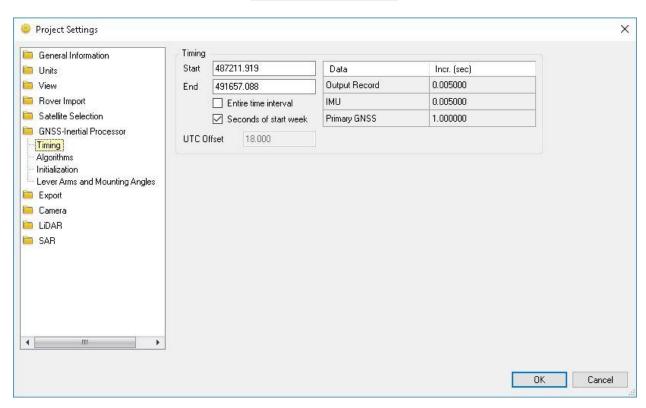


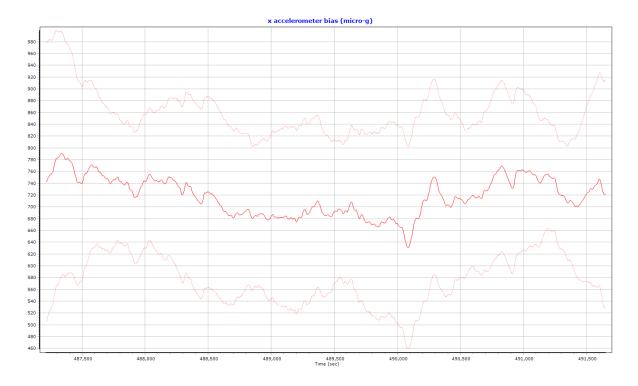


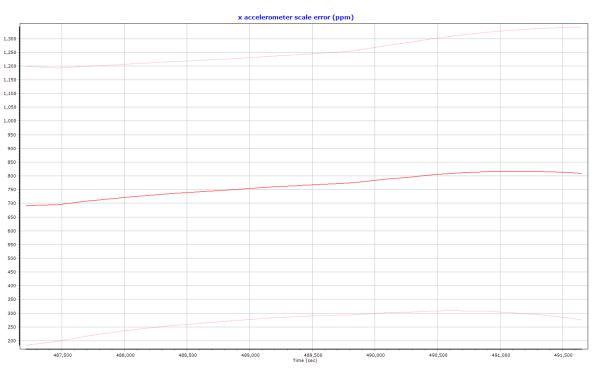


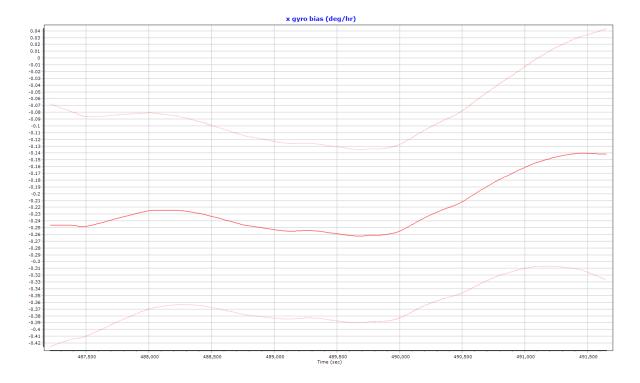


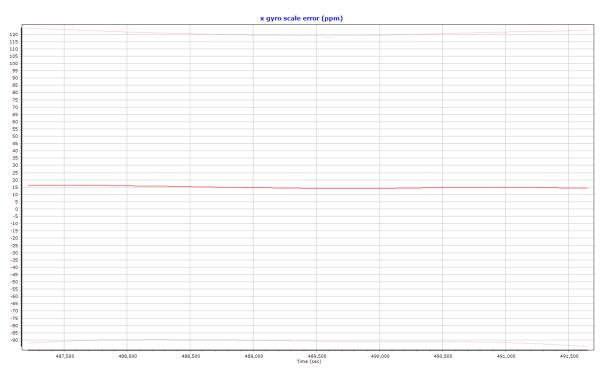


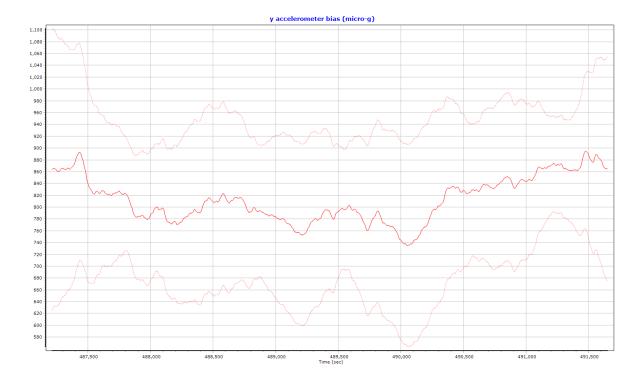


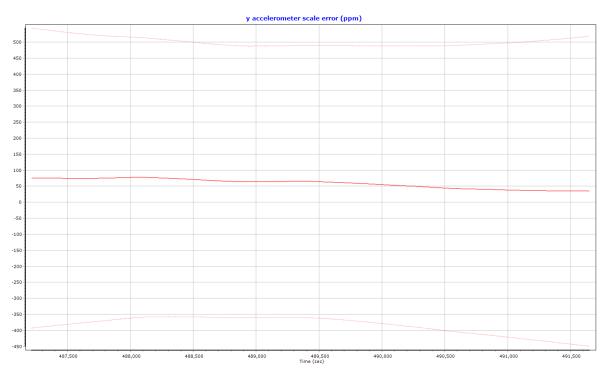


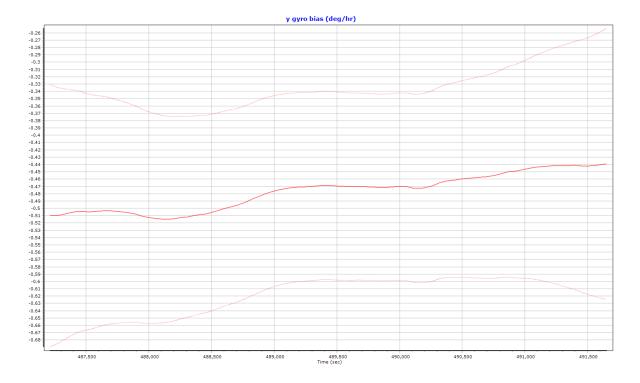


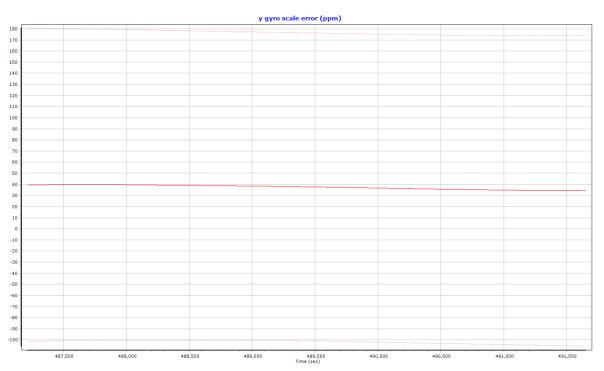


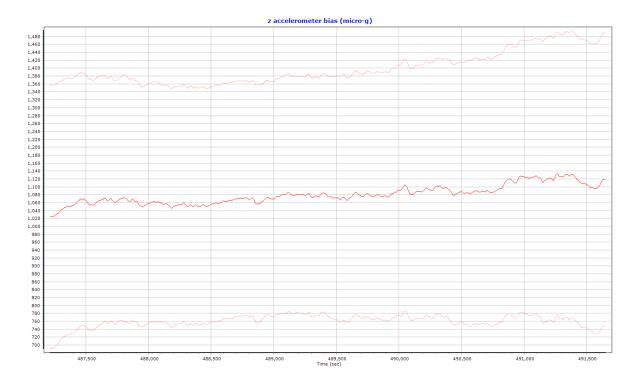


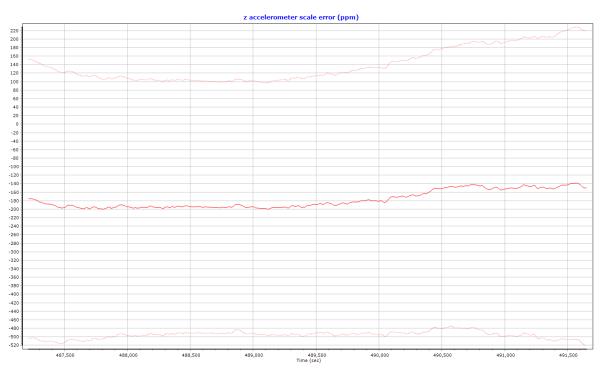


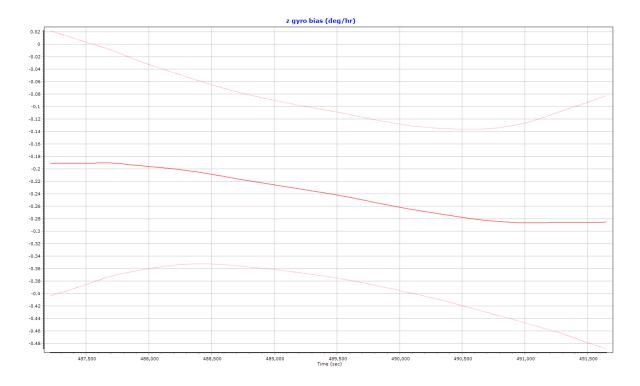


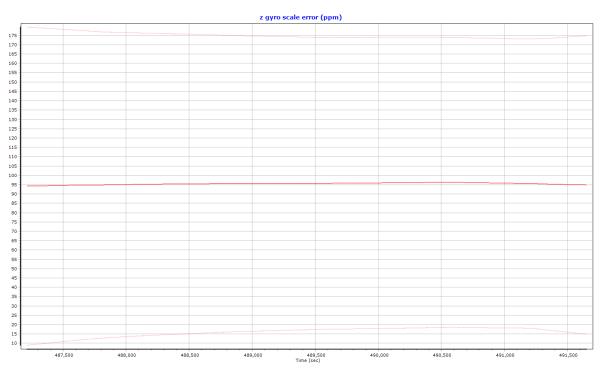


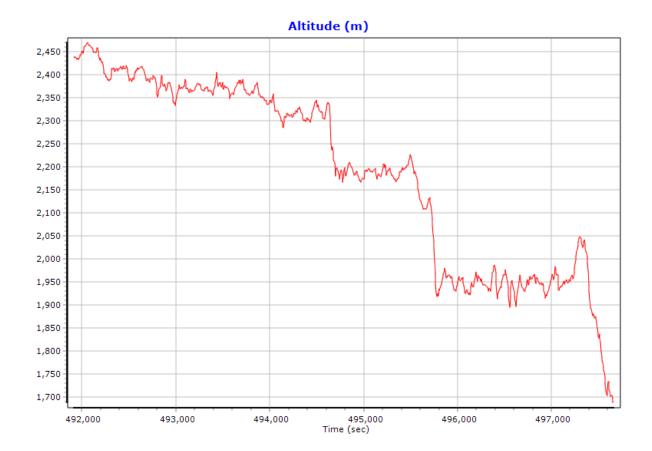




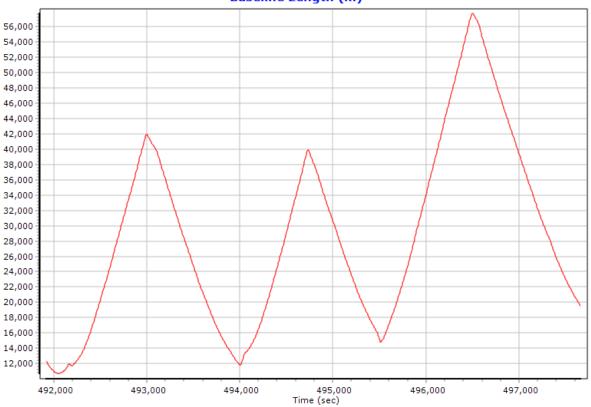


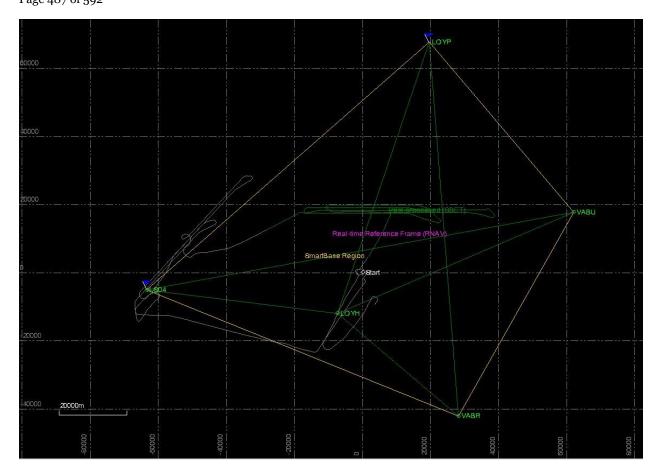


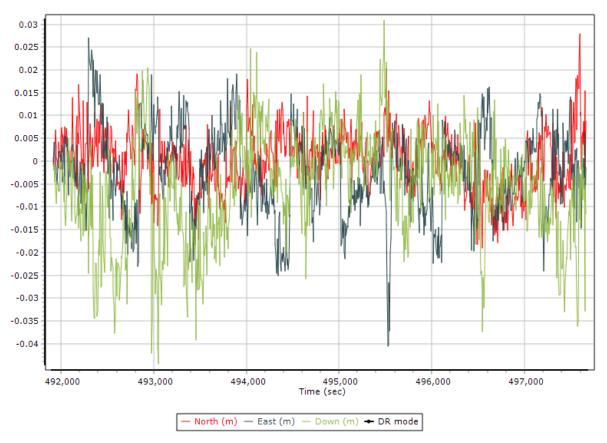


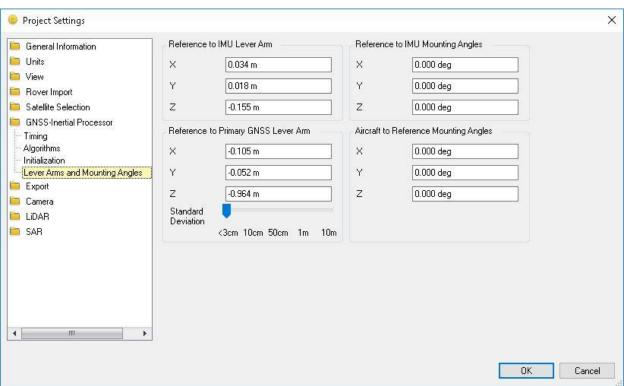


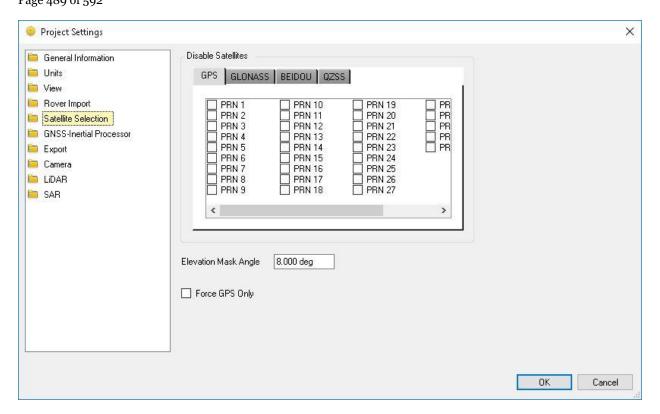


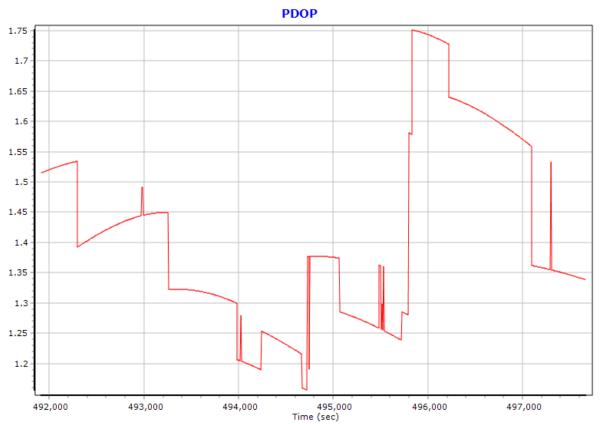


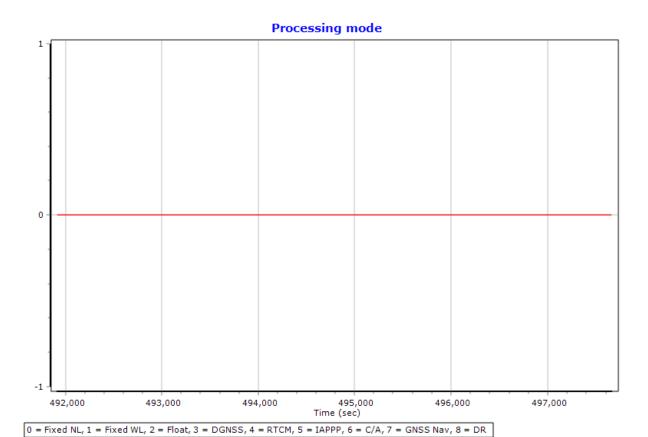


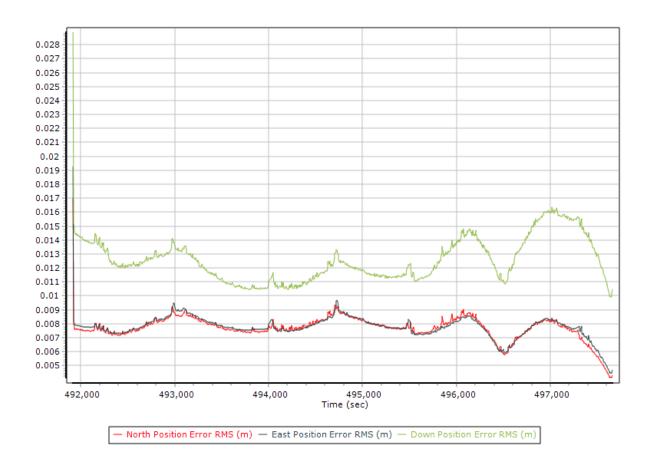


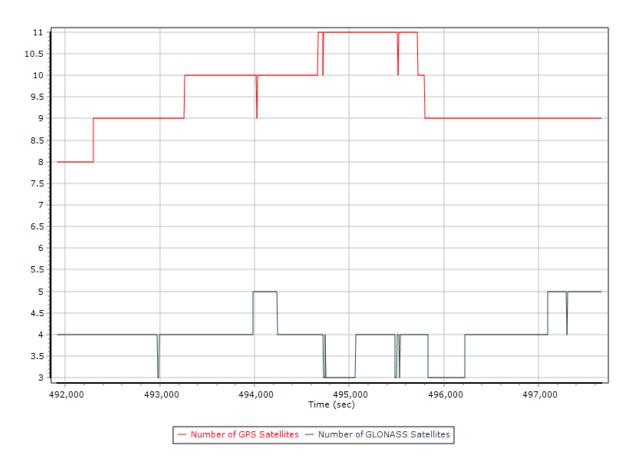


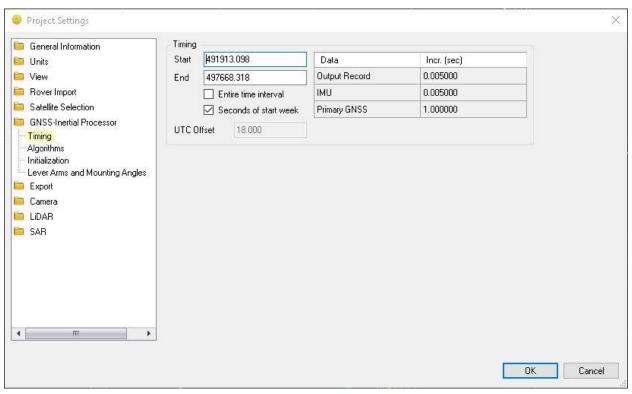




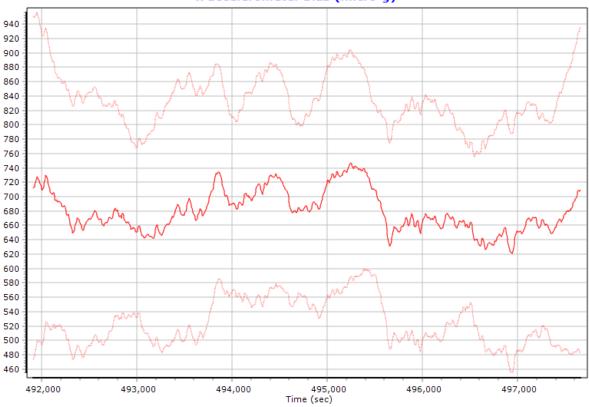




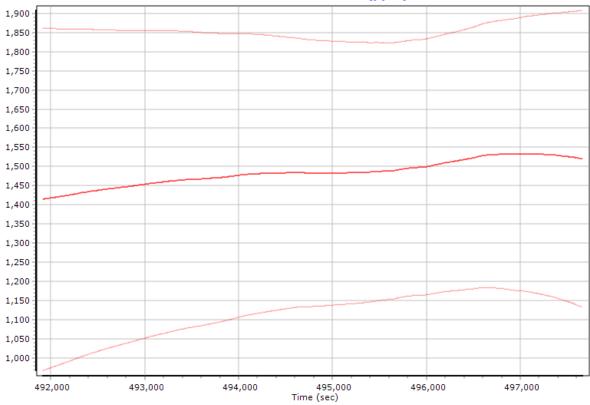




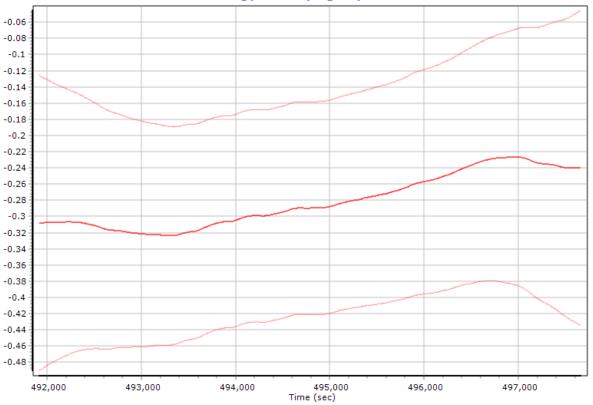




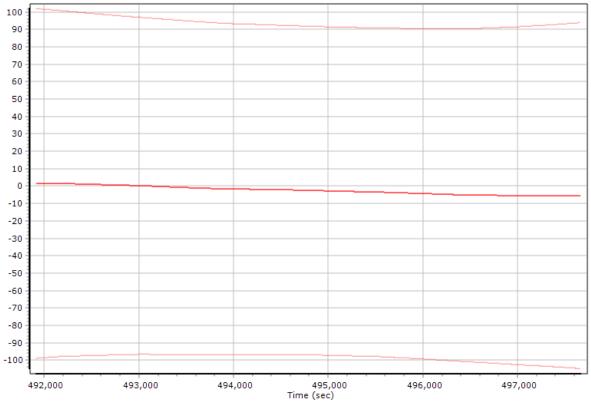
x accelerometer scale error (ppm)



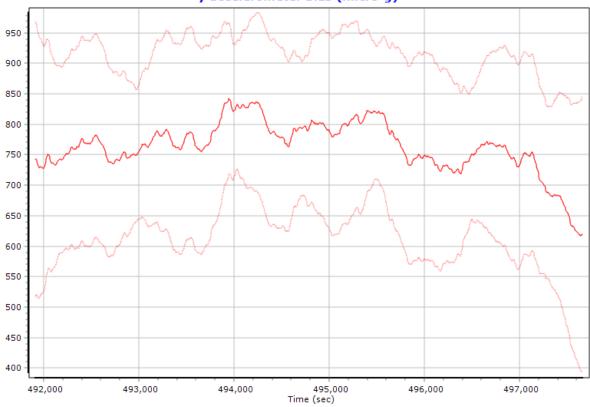




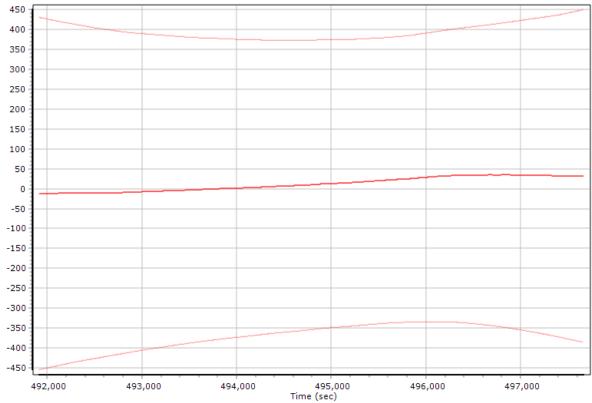






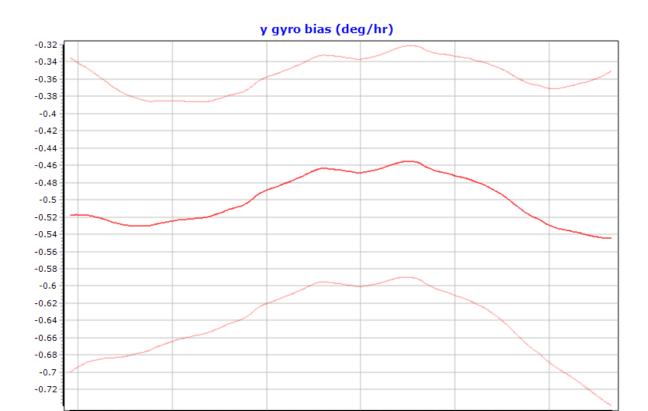






492,000

493,000



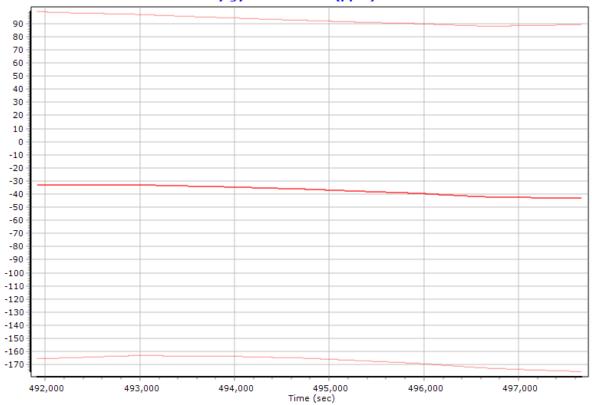
495,000 Time (sec)

496,000

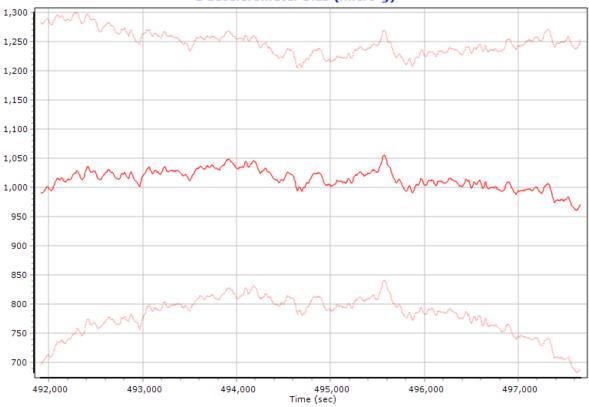
497,000

494,000

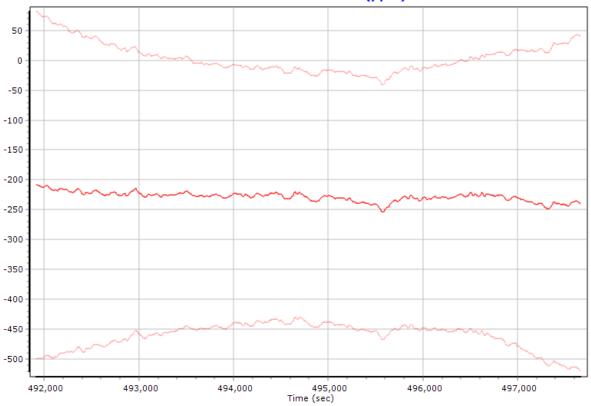




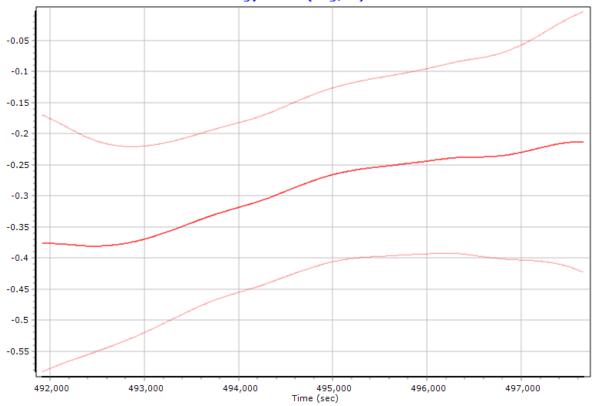




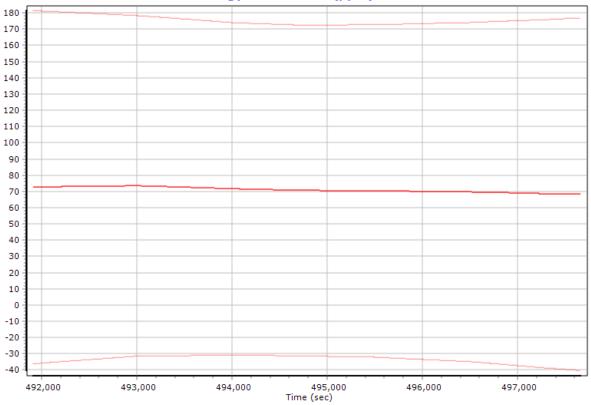




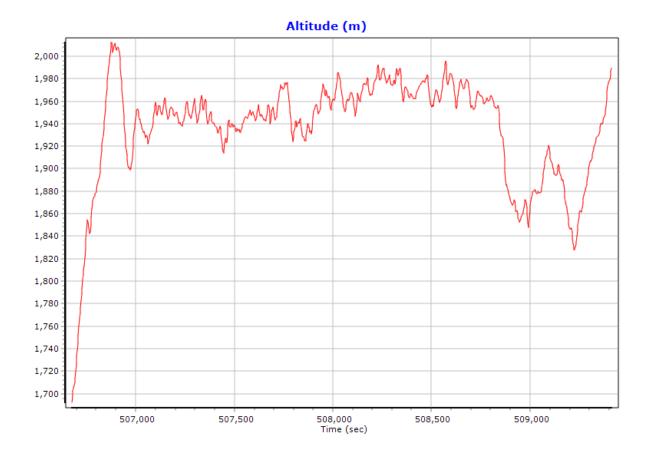




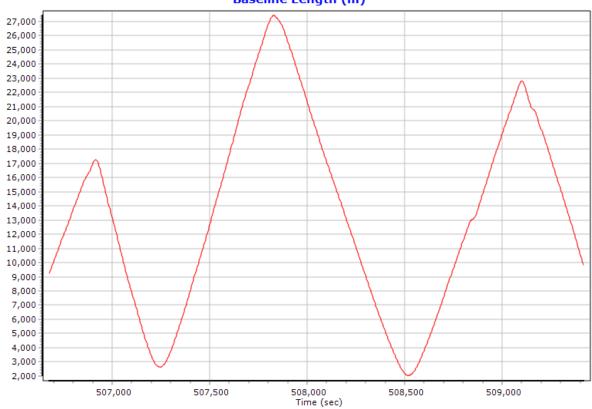


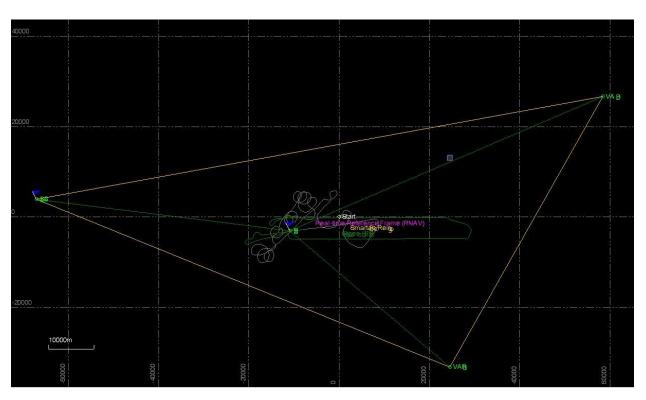


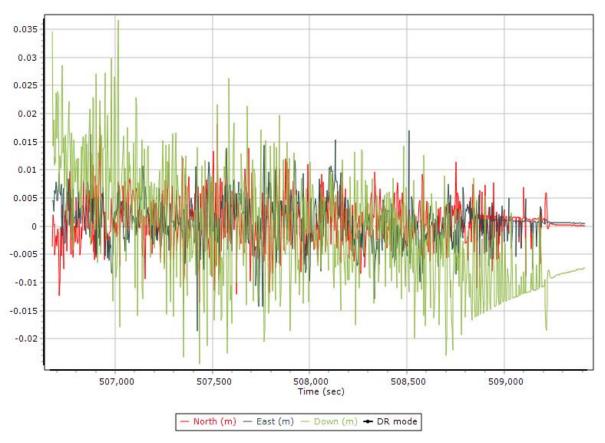
UNB18131B

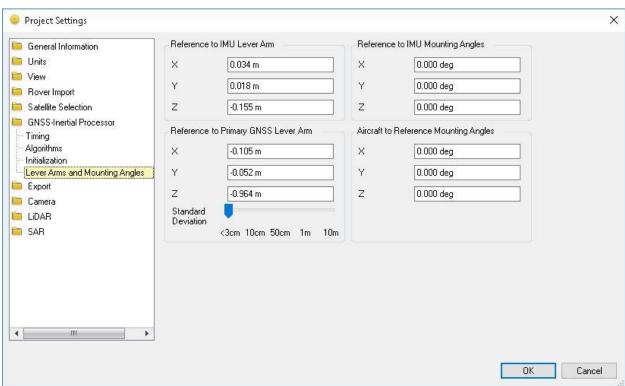


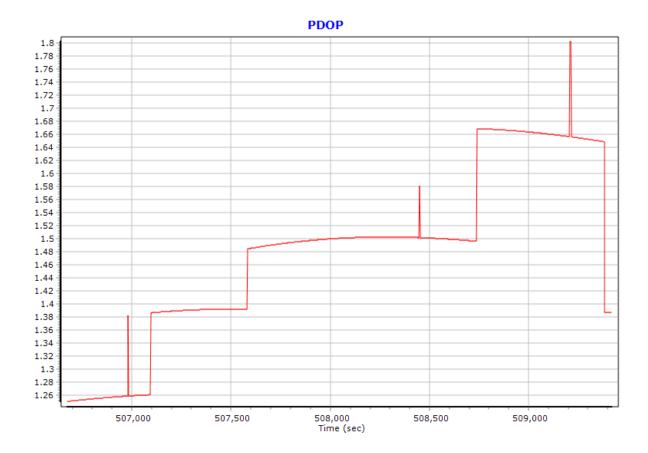








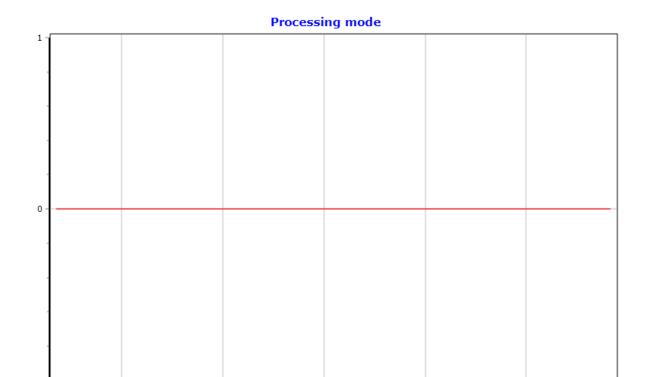




507,000

507,500

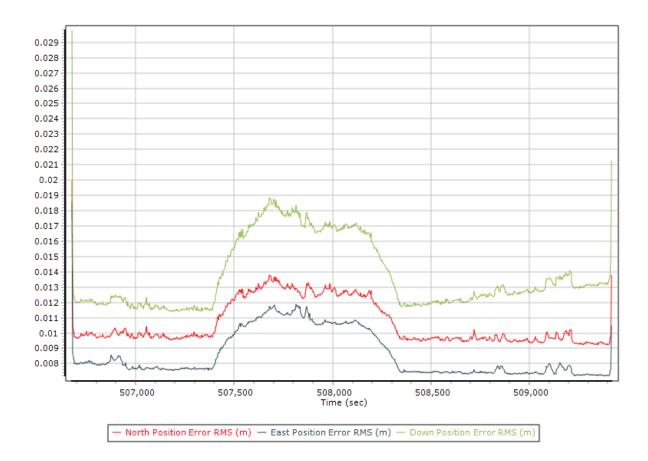
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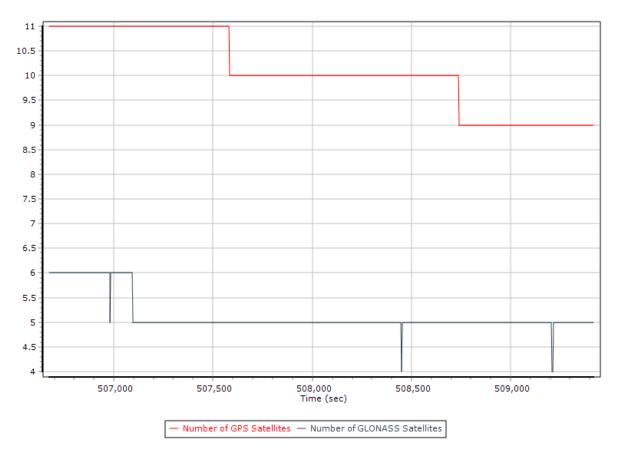


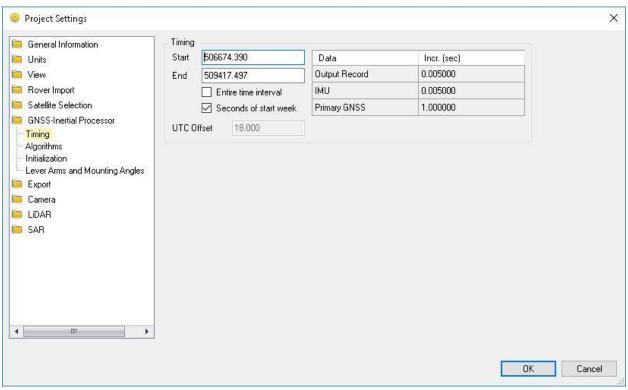
508,000 Time (sec)

508,500

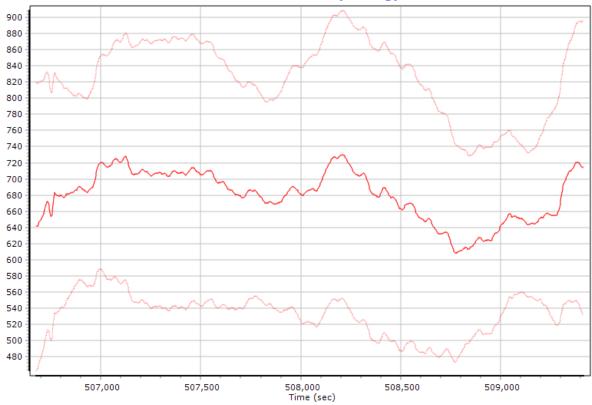
509,000



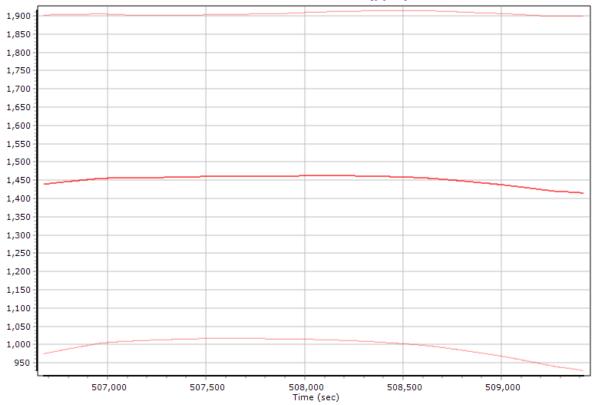




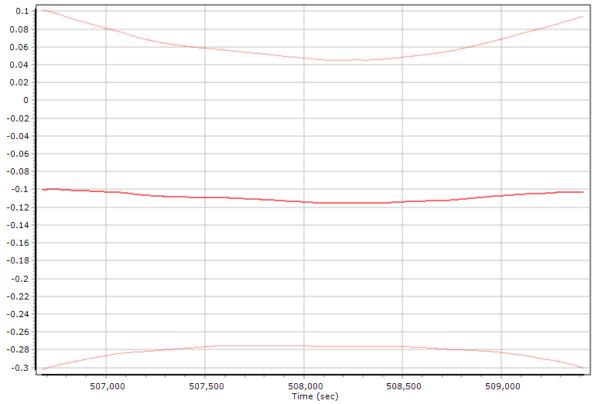




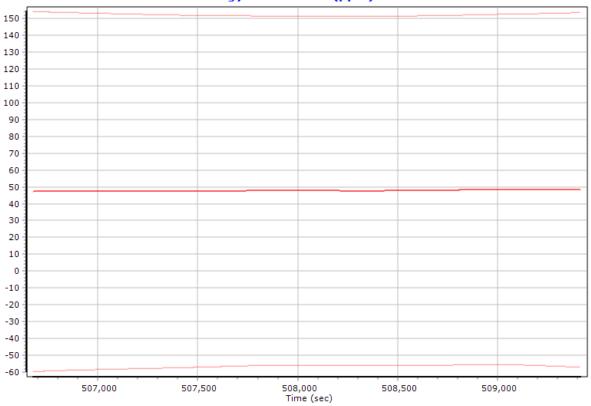
x accelerometer scale error (ppm)



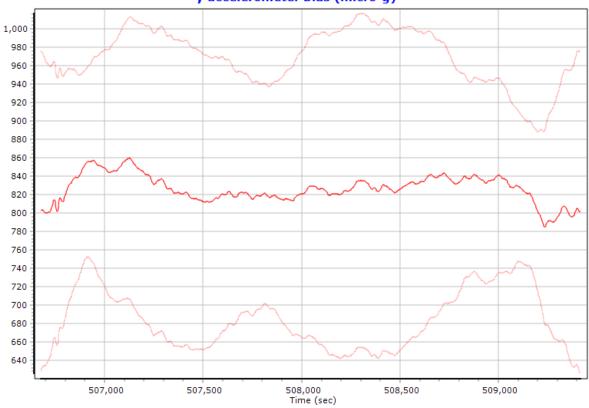




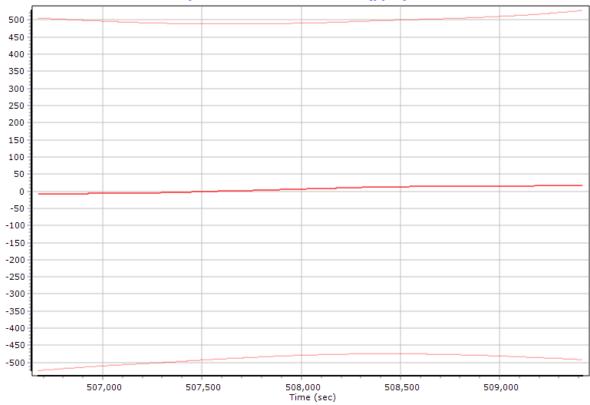




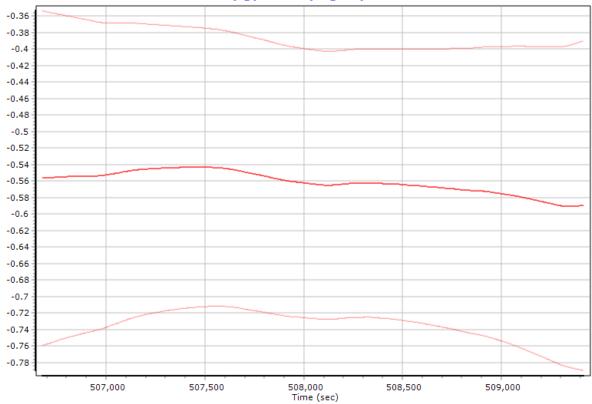




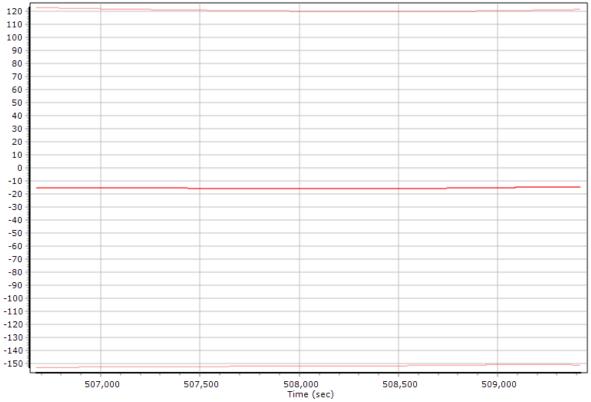




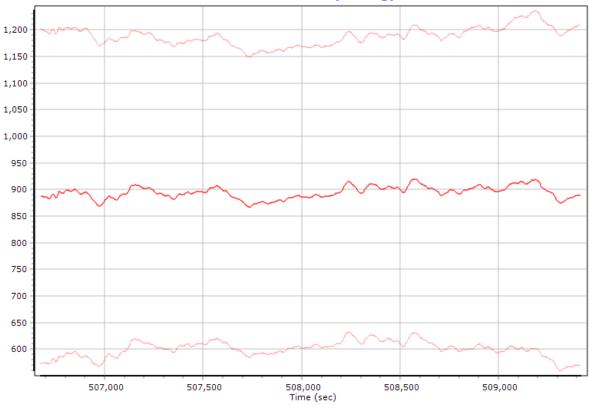
y gyro bias (deg/hr)



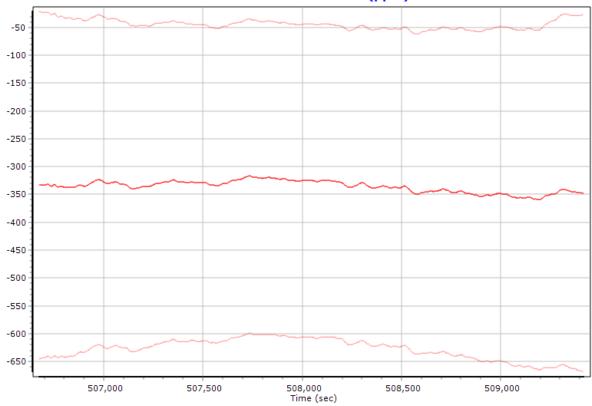




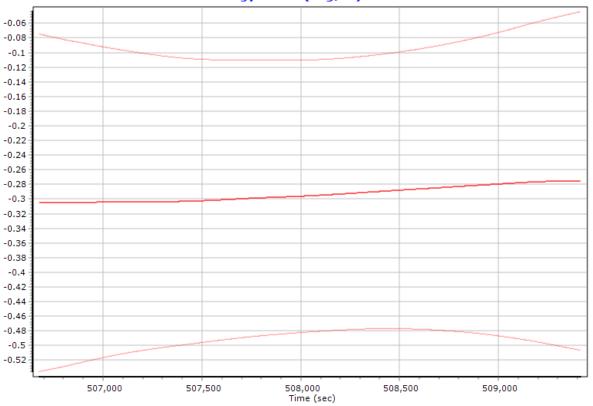
z accelerometer bias (micro-g)



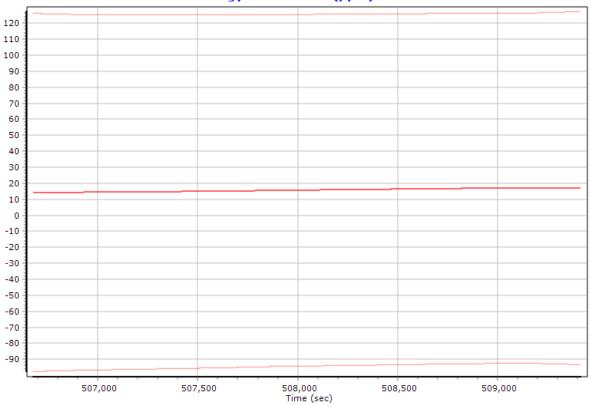




z gyro bias (deg/hr)

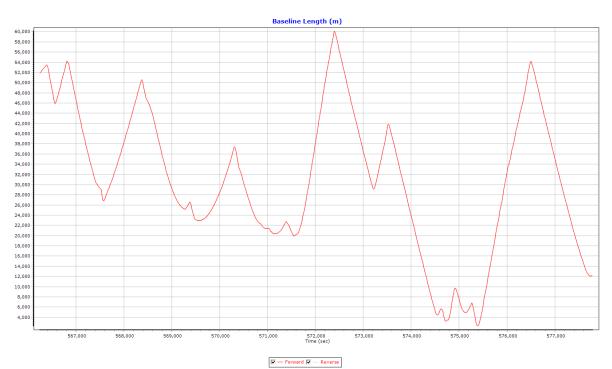


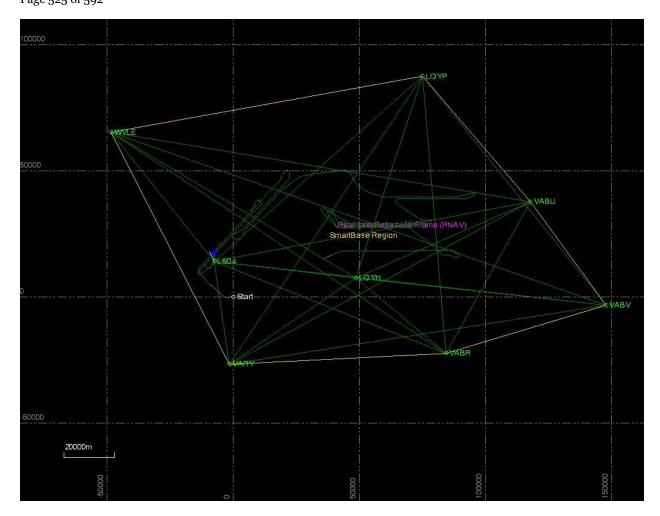


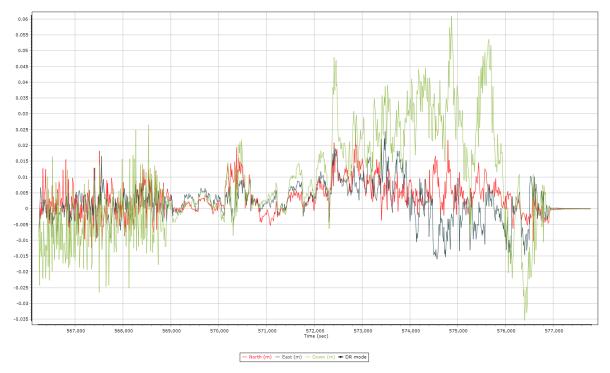


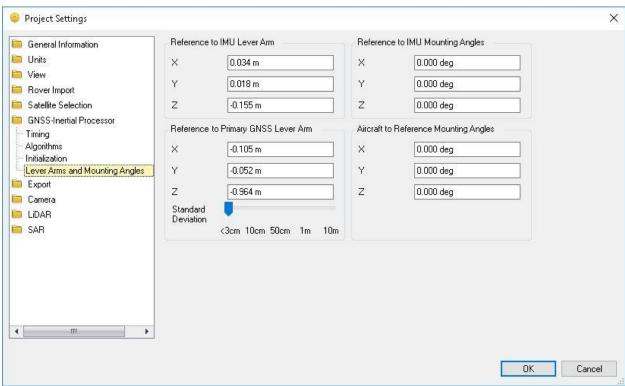
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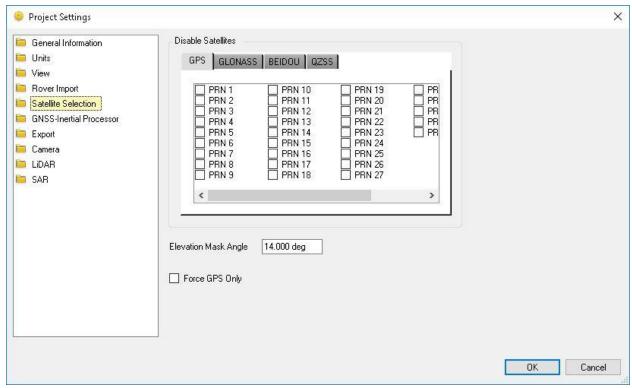


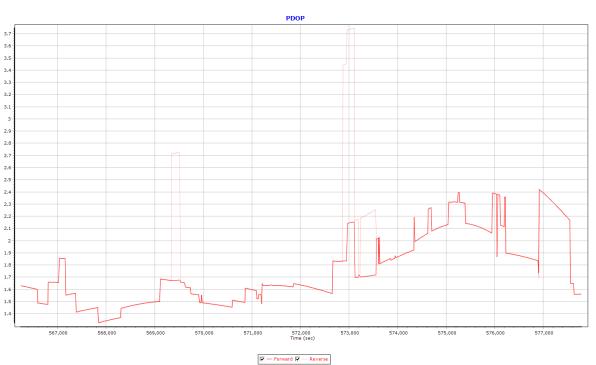


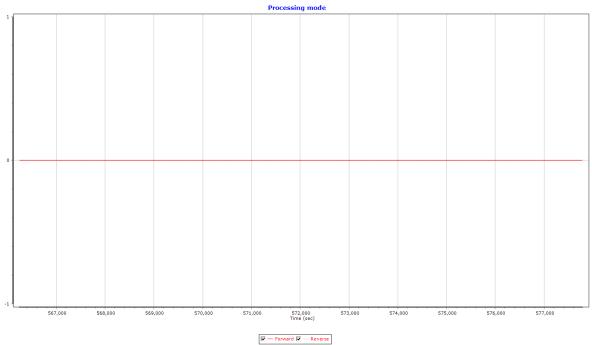




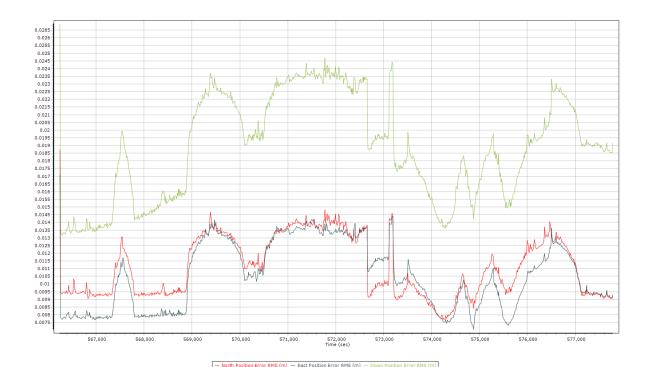


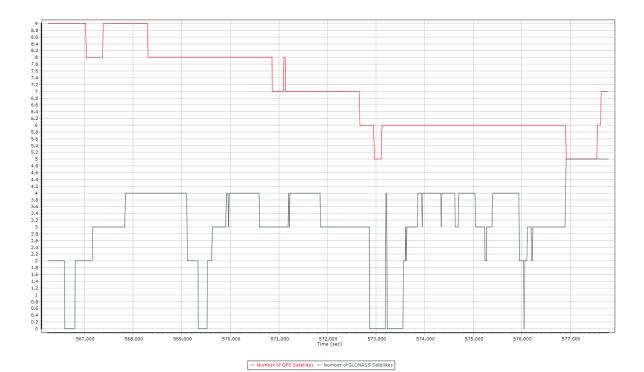


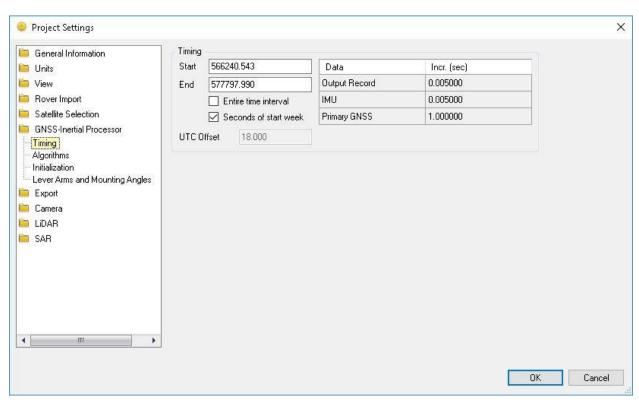


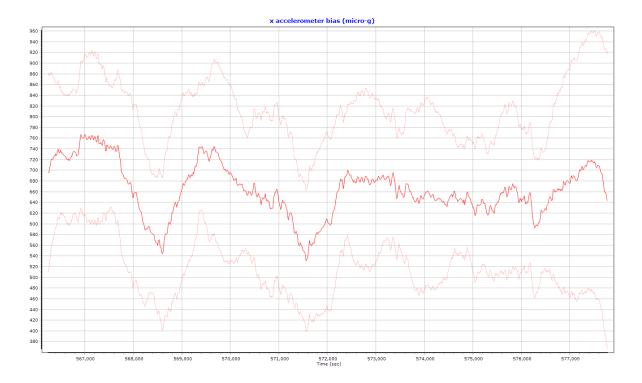


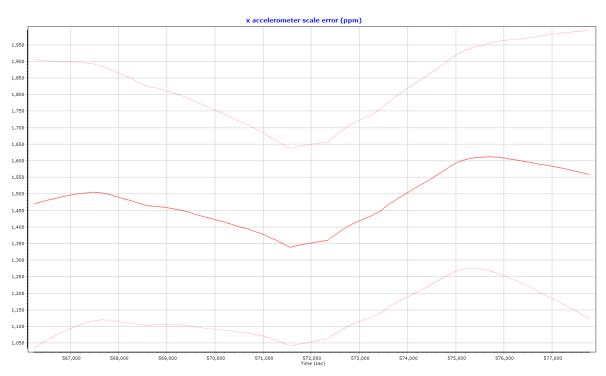
0 = Fixed NL, 1 = Fixed WL, 2 = Float, 3 = DGNSS, 4 = RTCM, 5 = IAPPP, 6 = C/A, 7 = GNSS Nav, 8 = DR

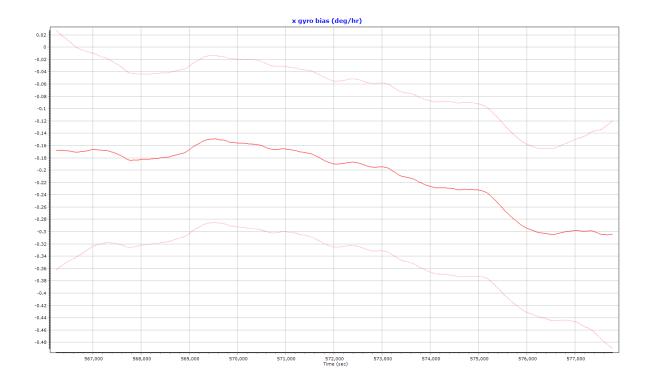


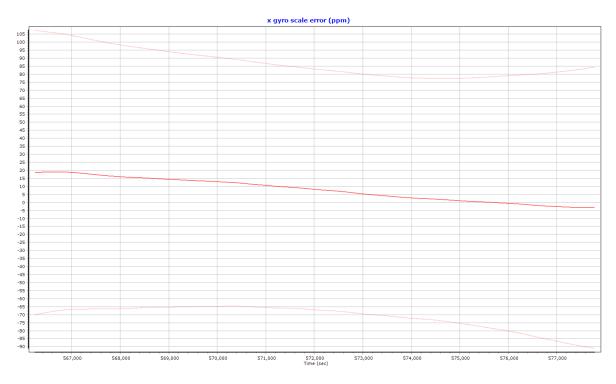


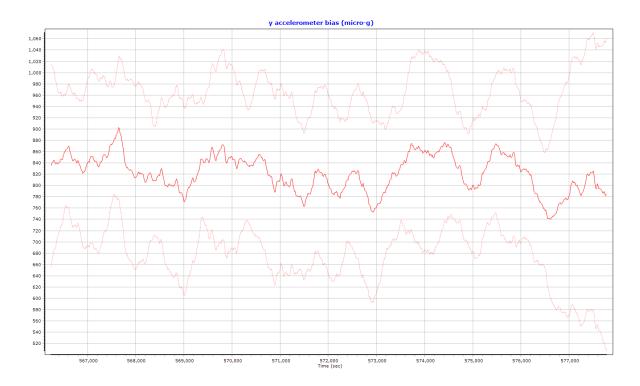


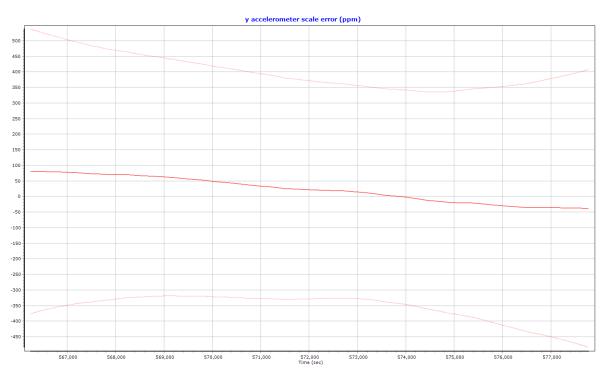


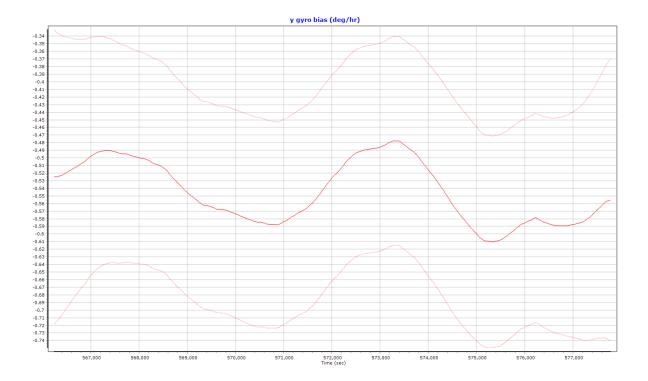


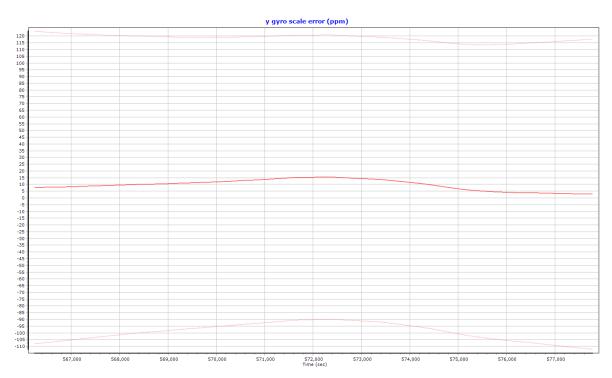




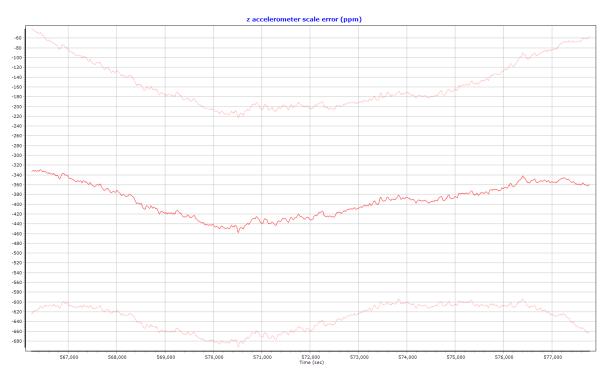


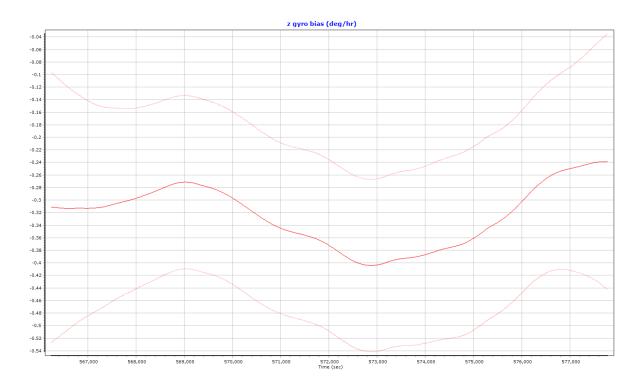


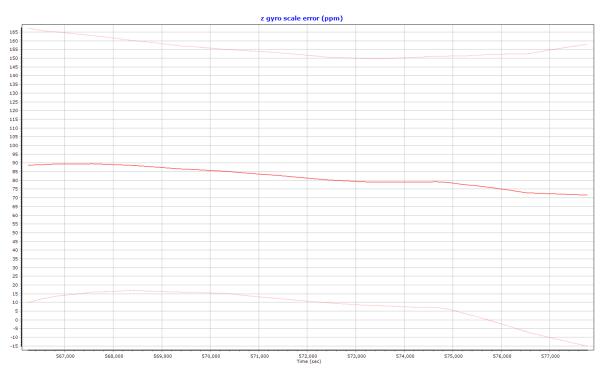




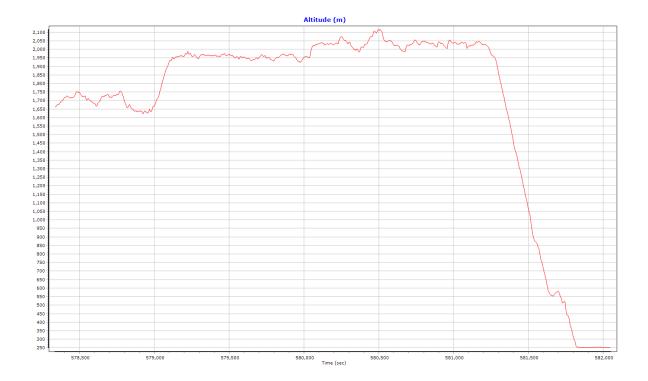


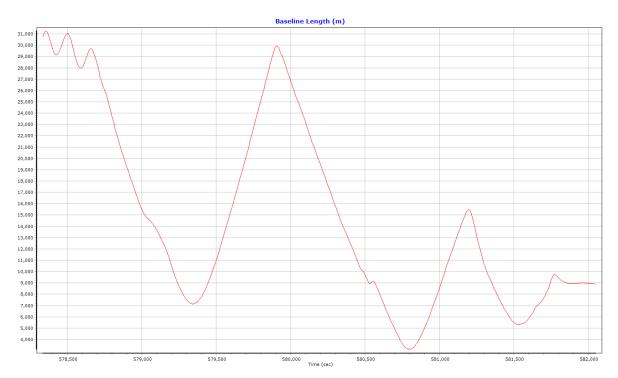


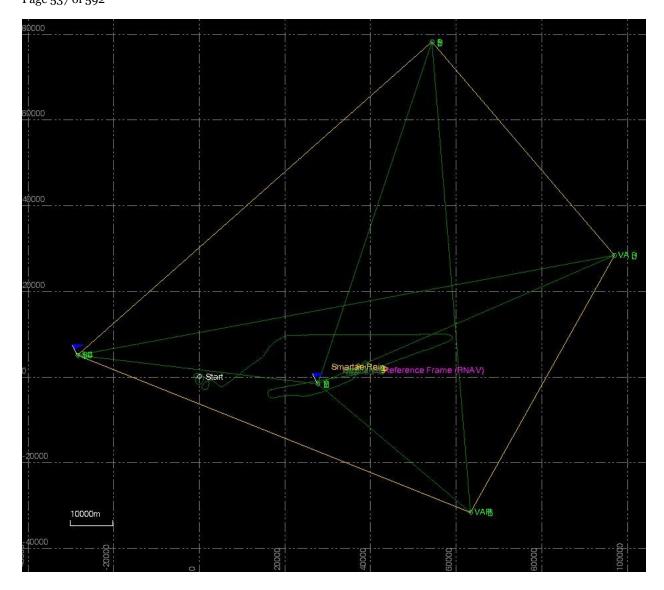


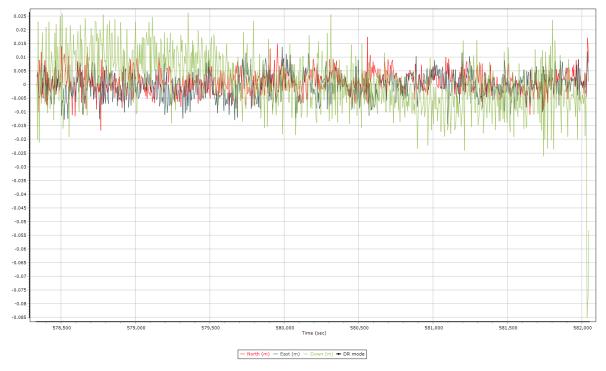


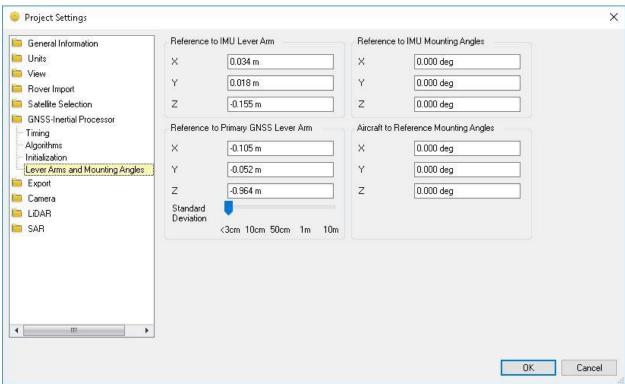
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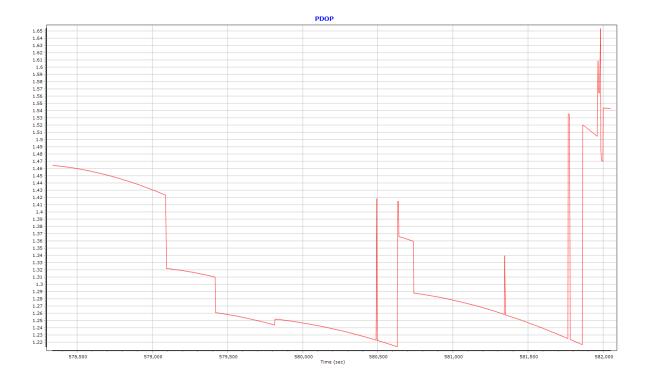


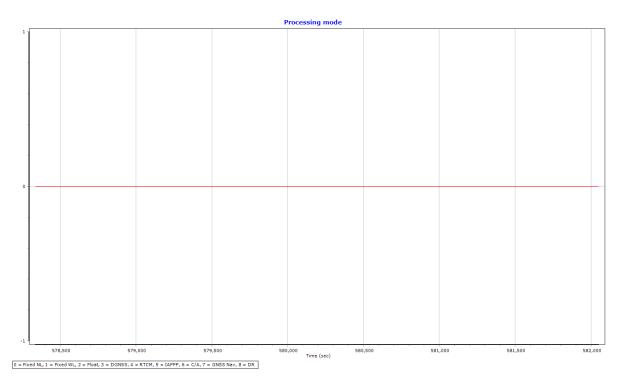


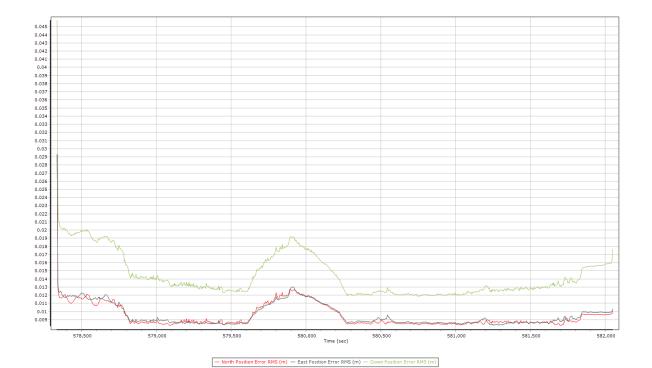


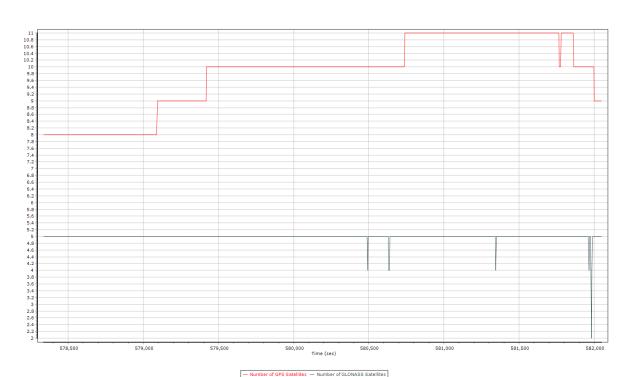


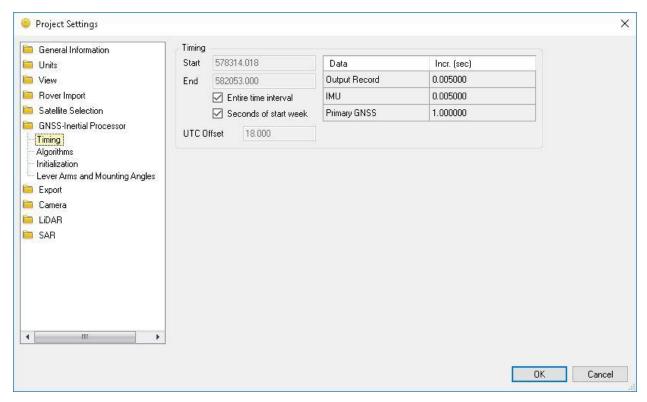


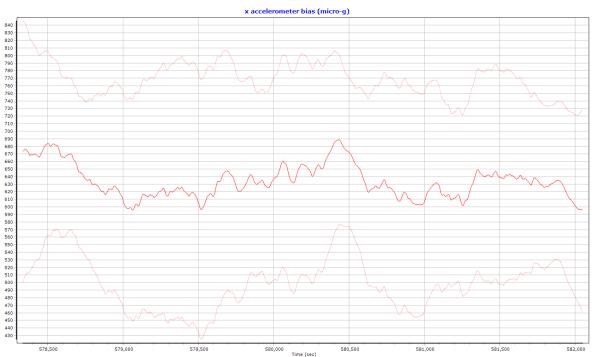


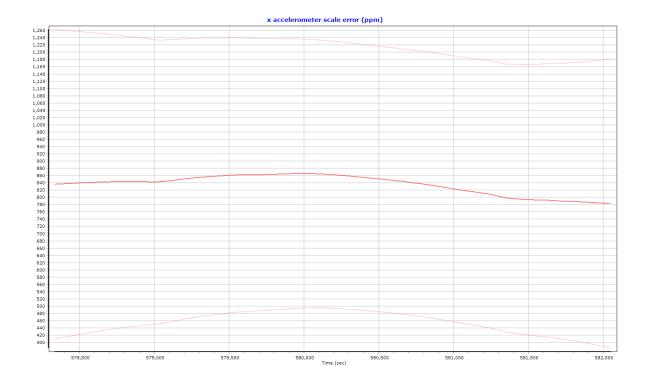


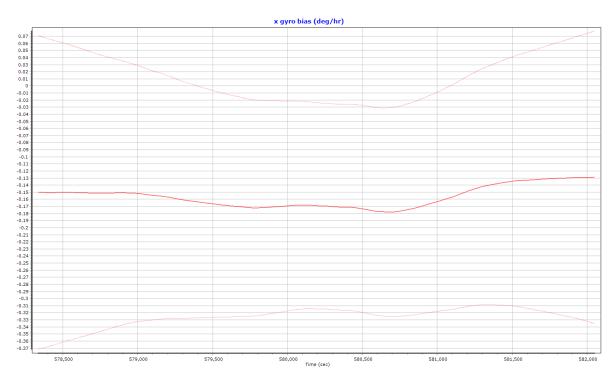


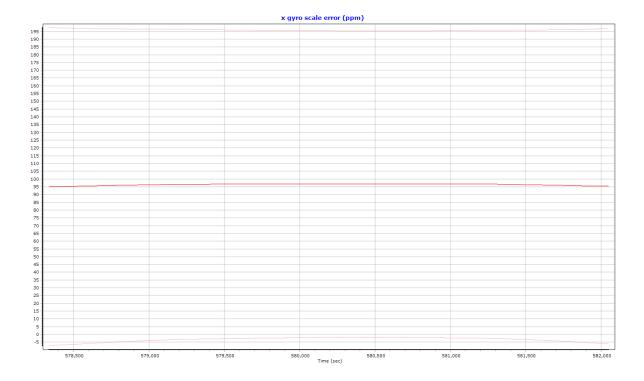




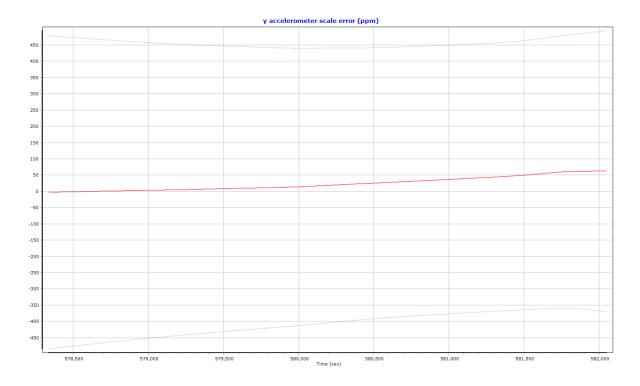


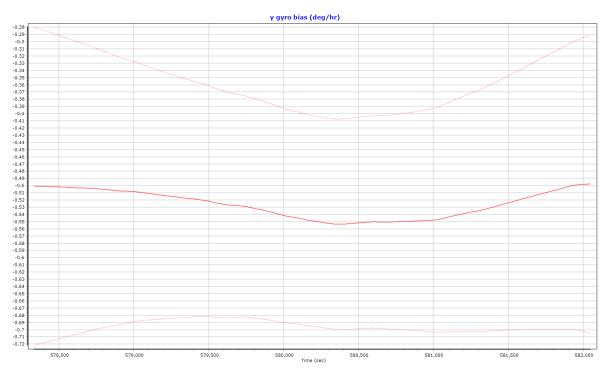


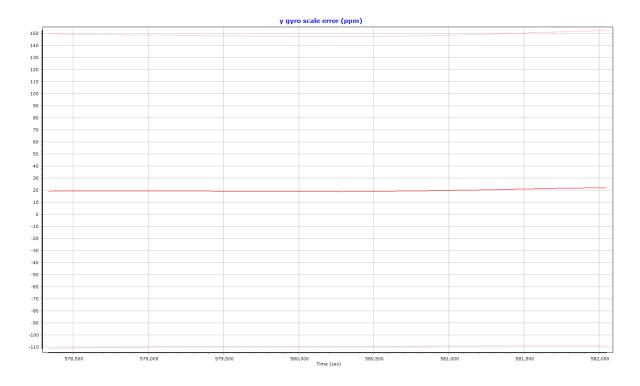


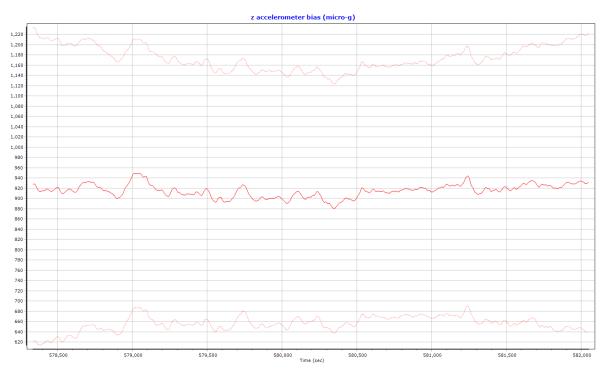


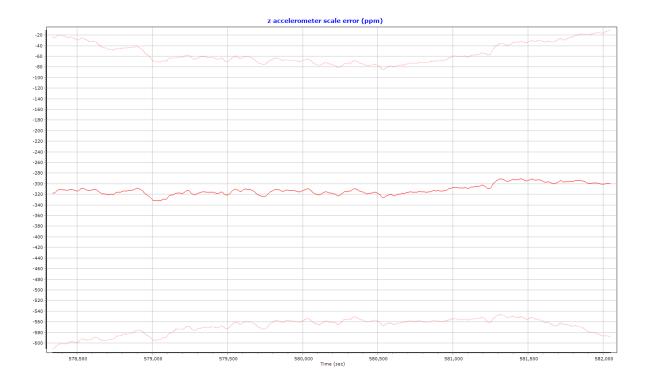


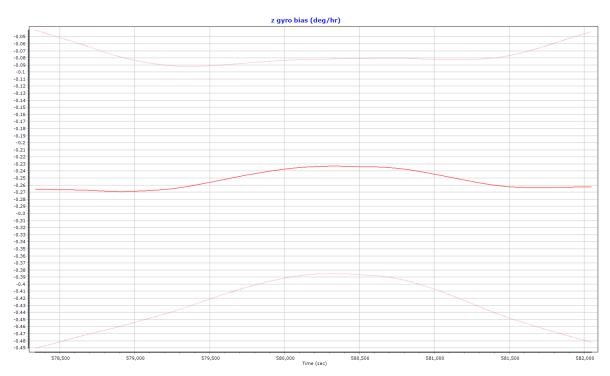


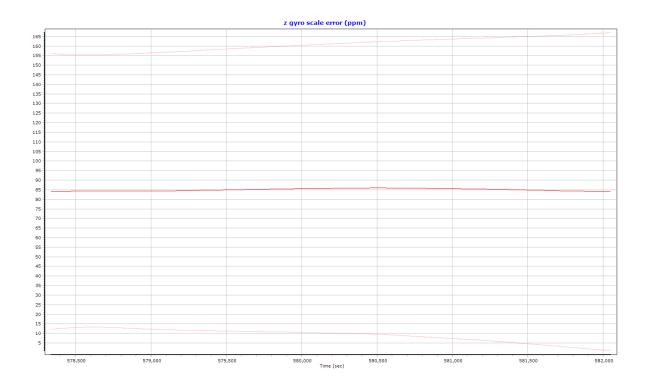






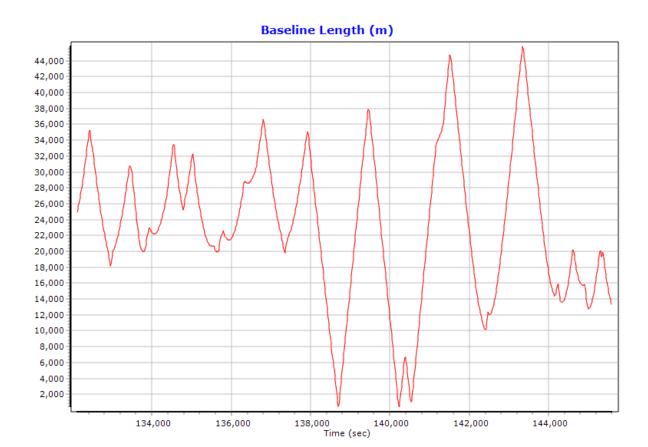


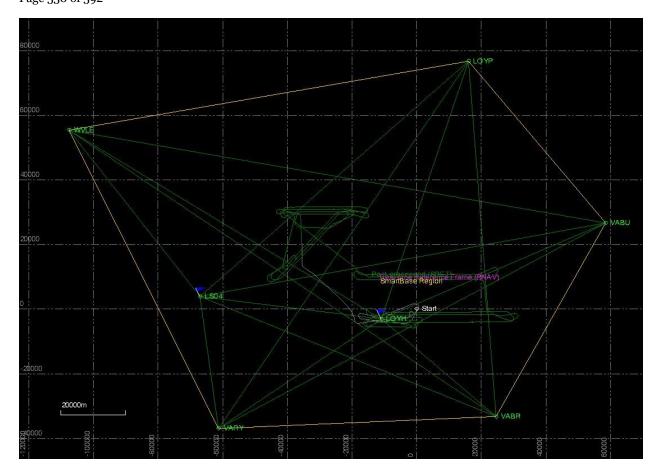




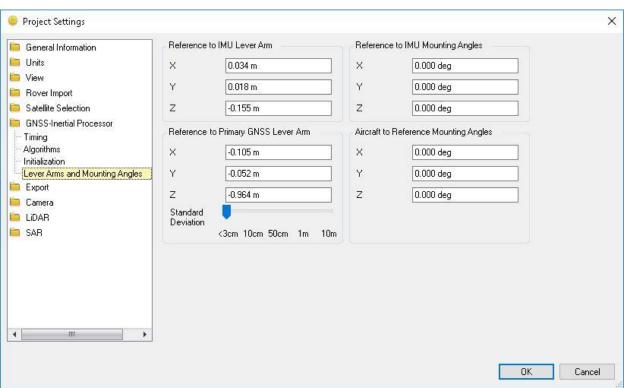
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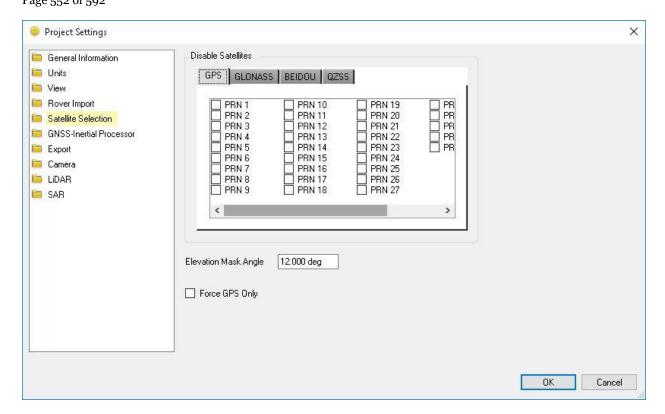


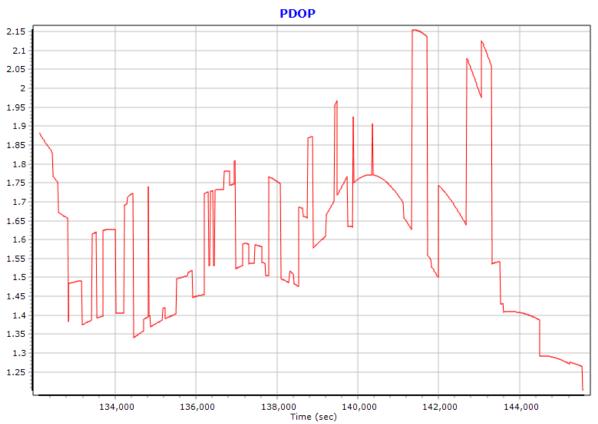


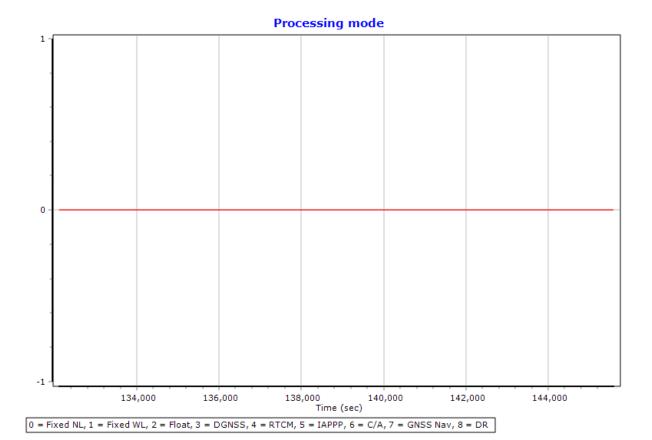


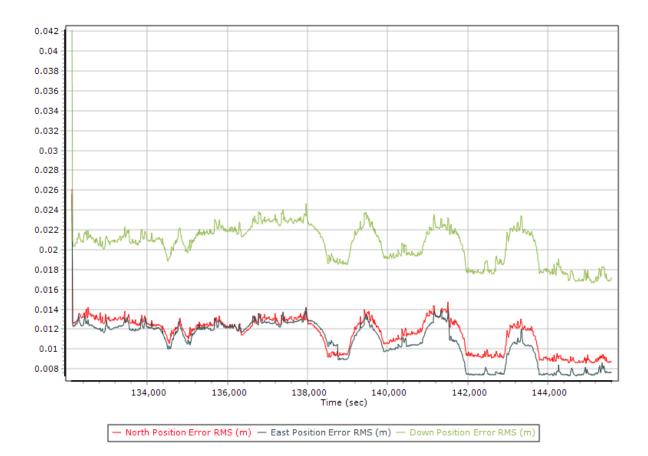


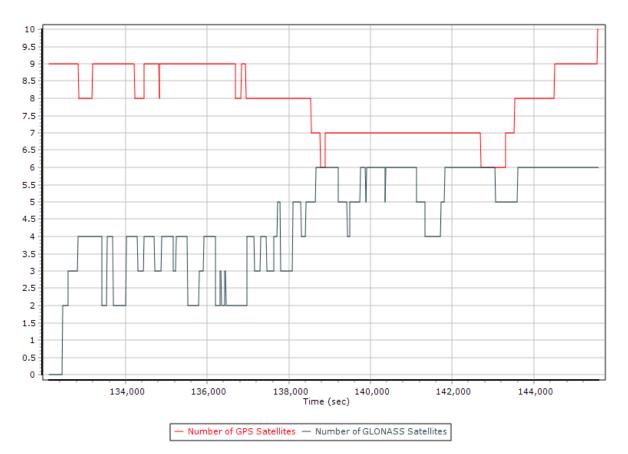


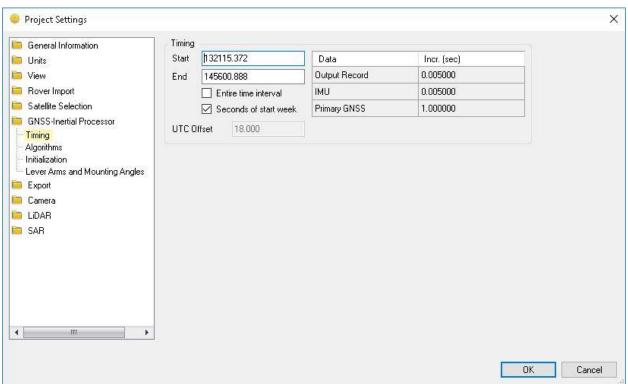


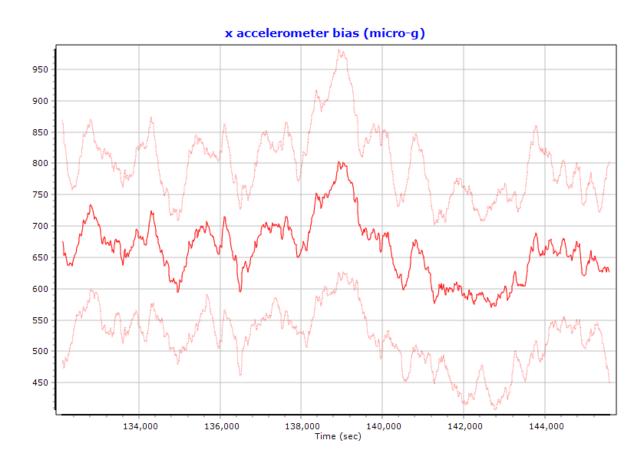




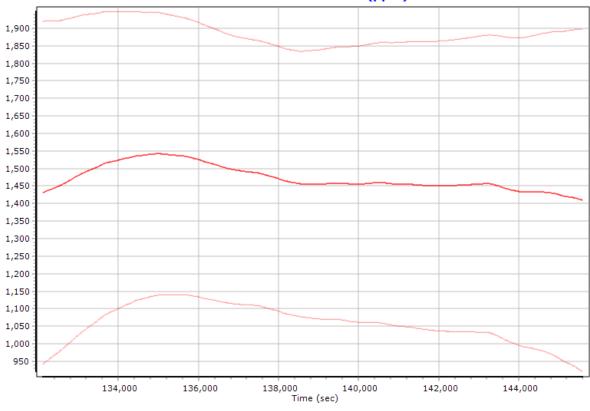




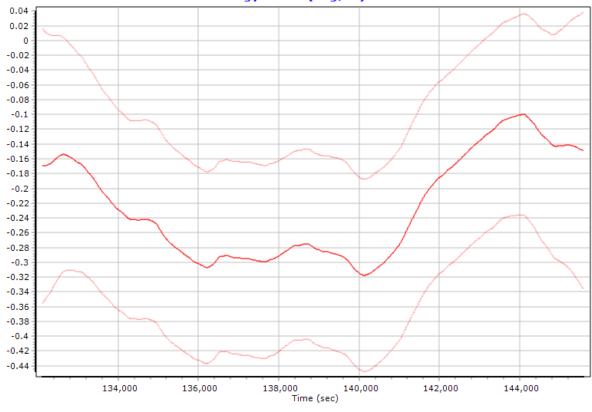




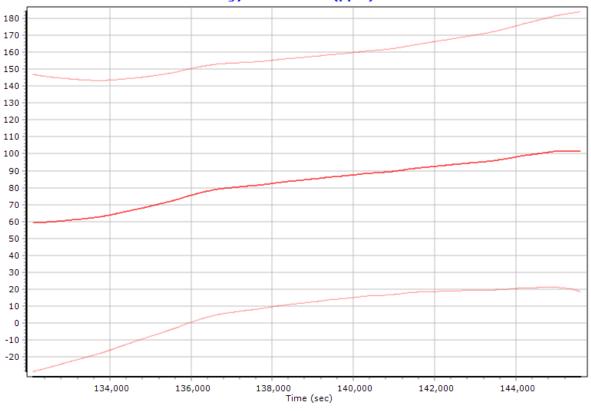
x accelerometer scale error (ppm)



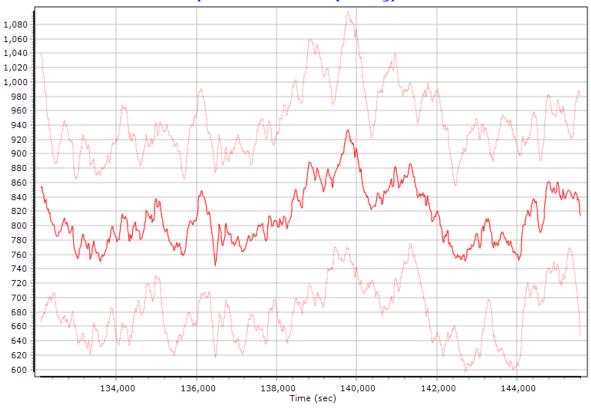




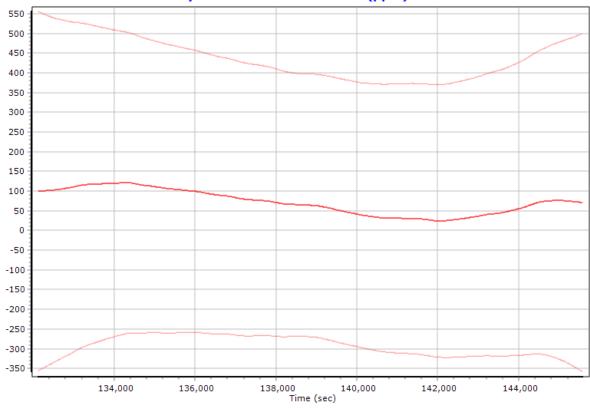




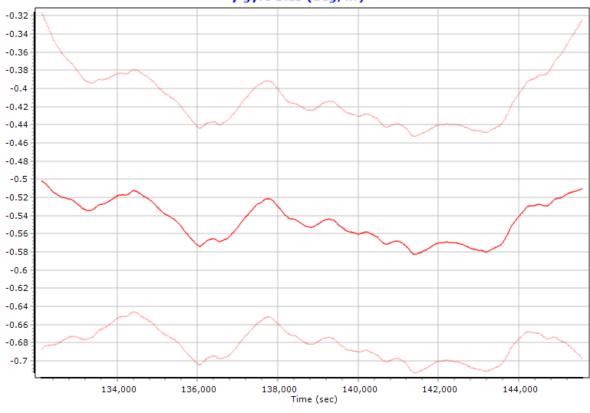




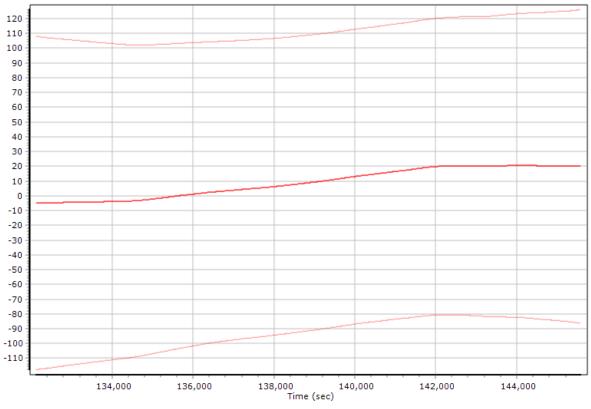




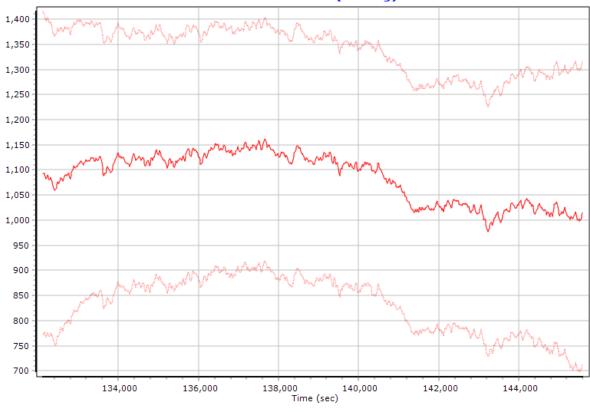




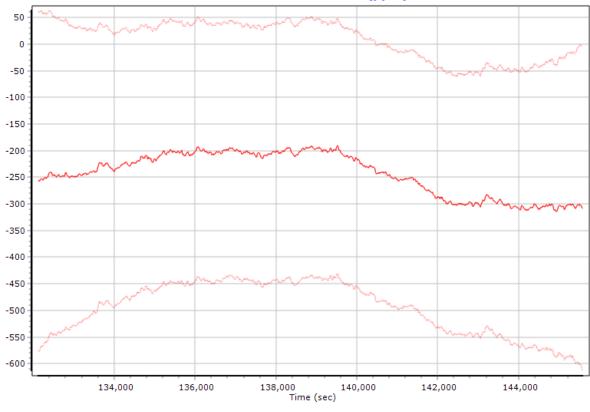




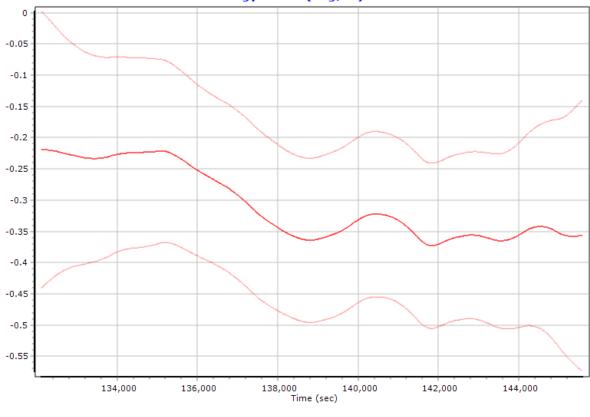


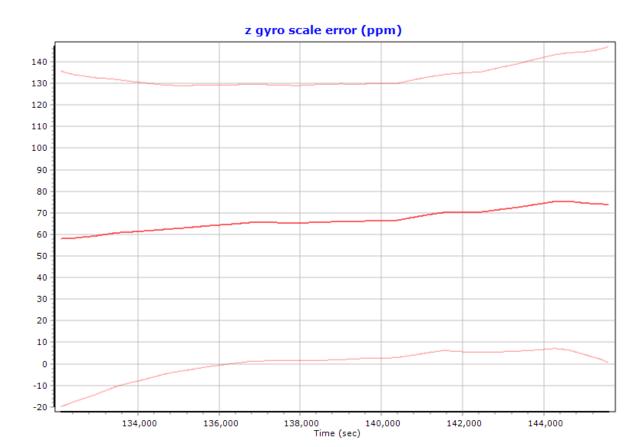




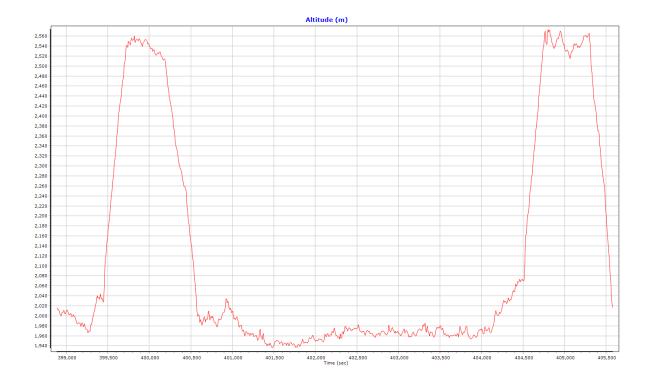


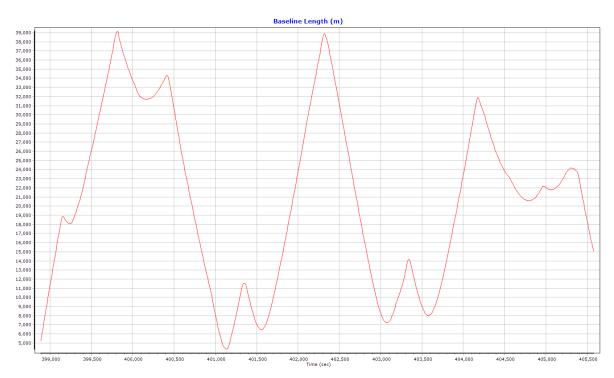


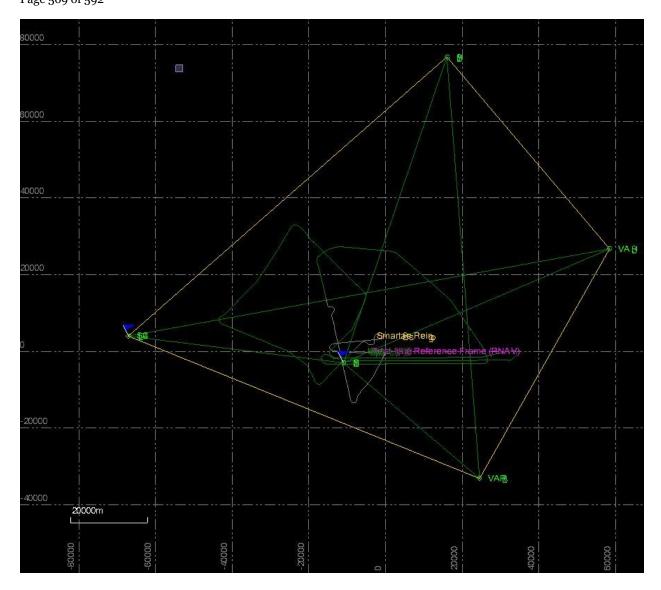




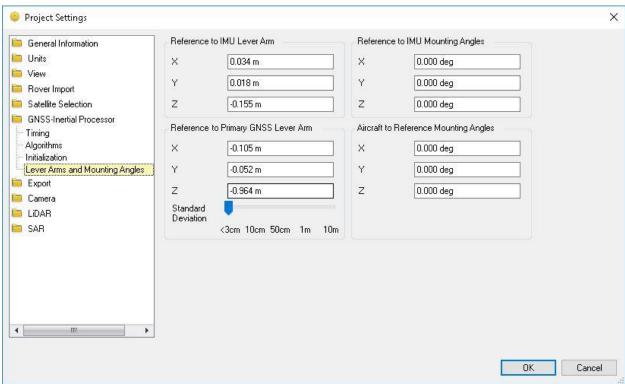
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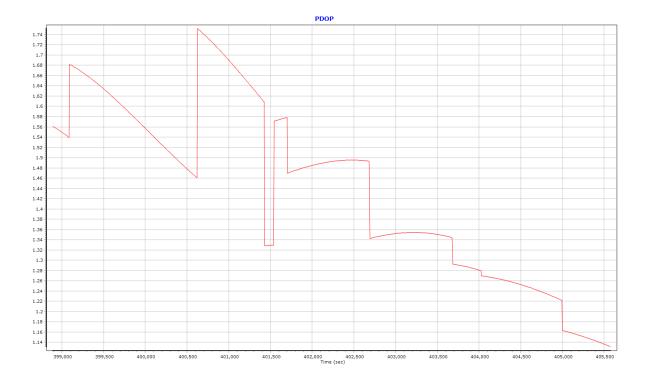


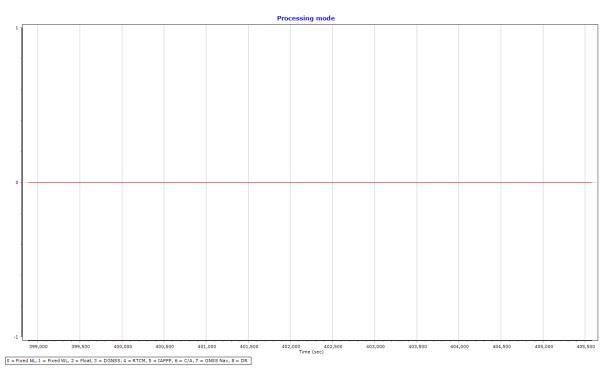


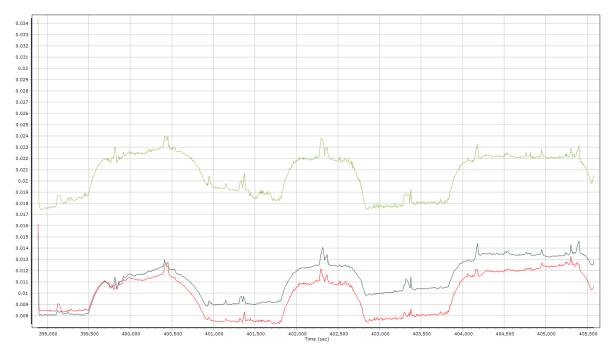


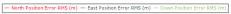


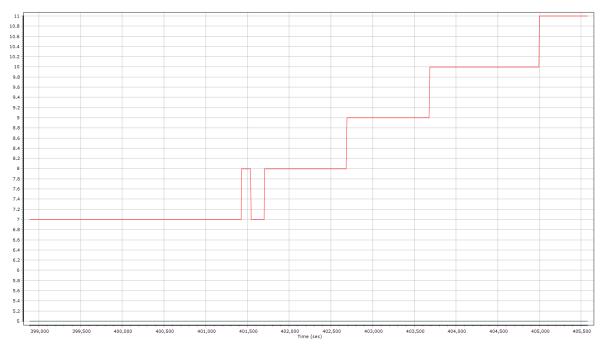




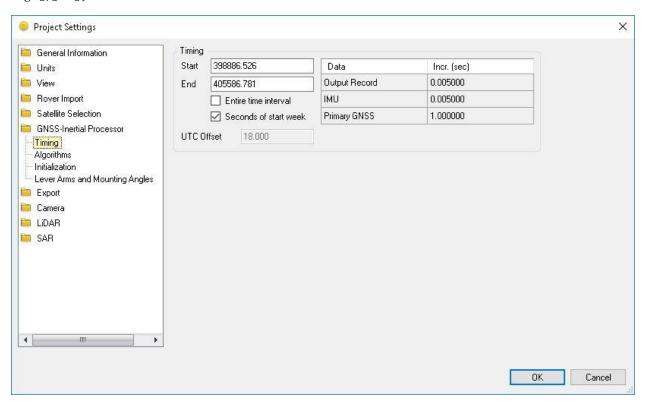




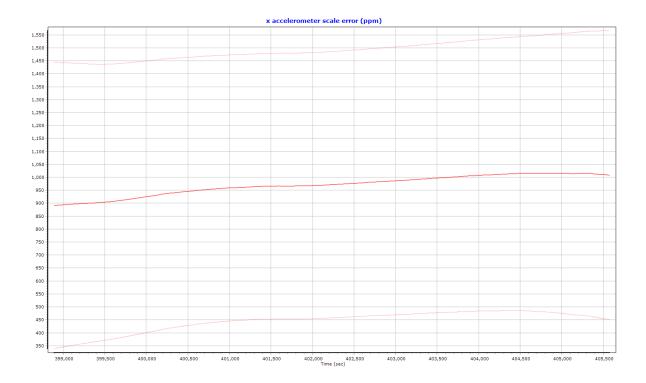


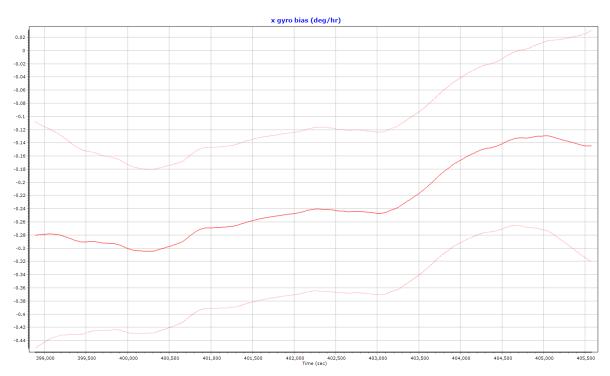


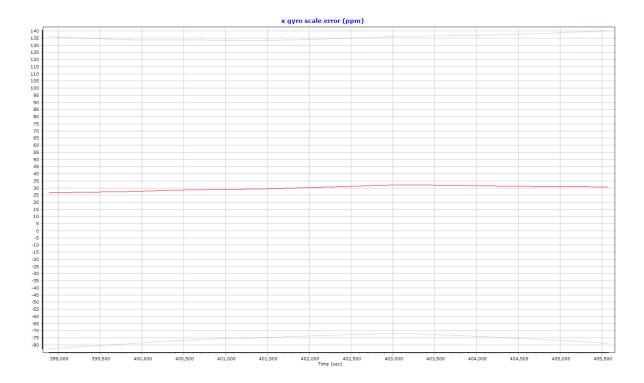
Number of GPS Satellites — Number of GLONASS Satellites

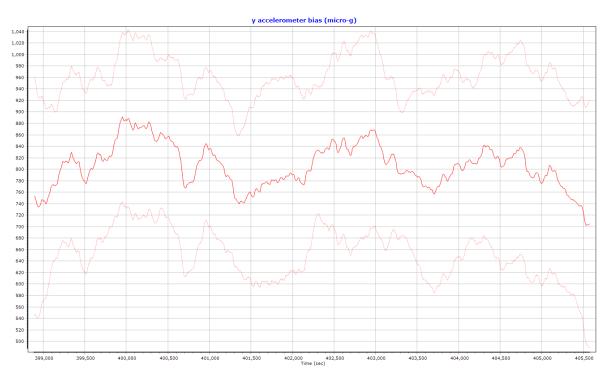


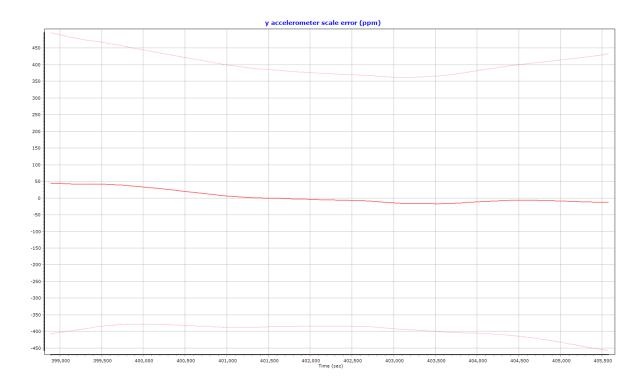


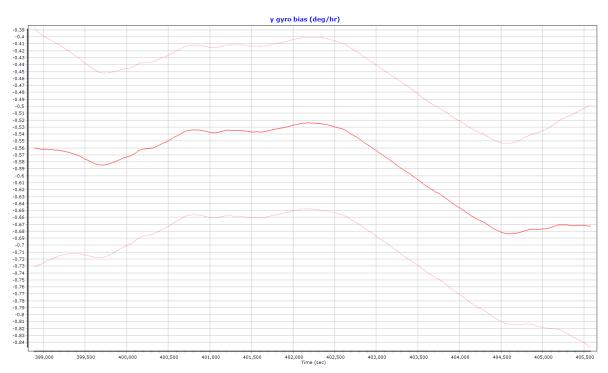


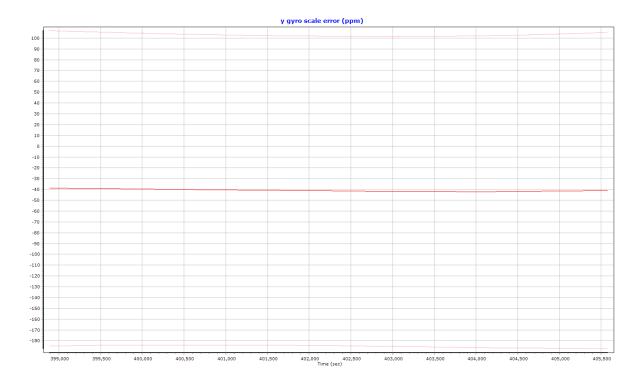


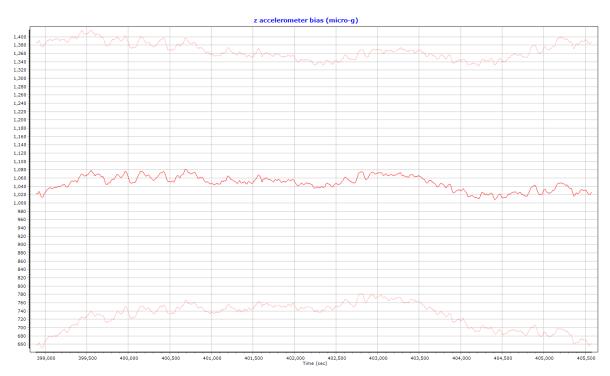


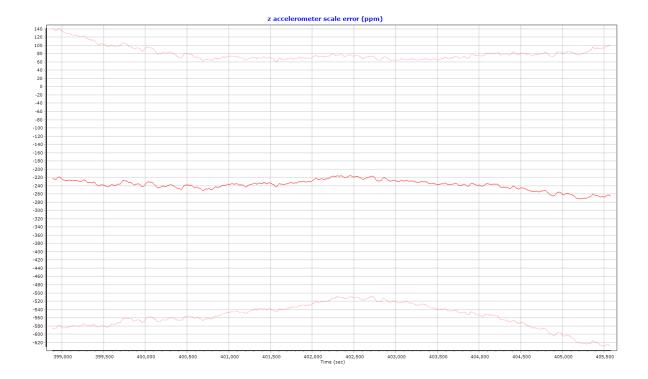


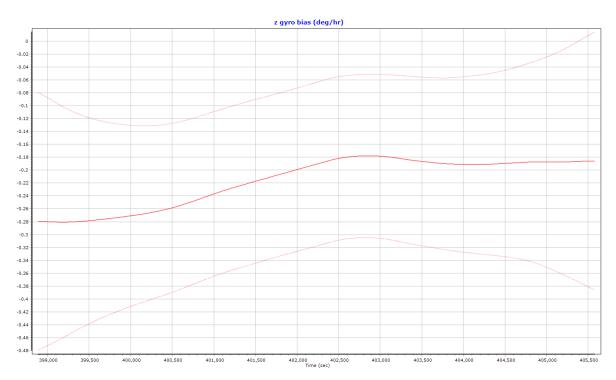


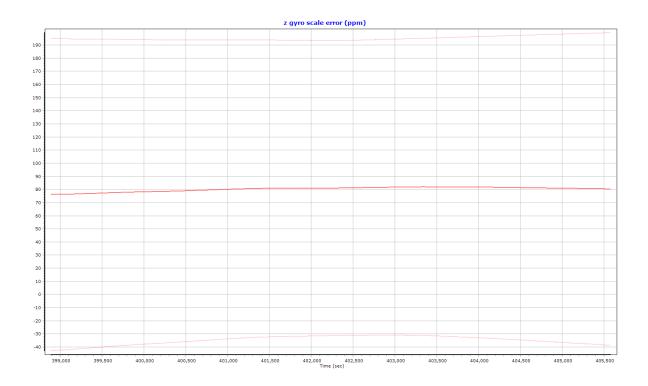




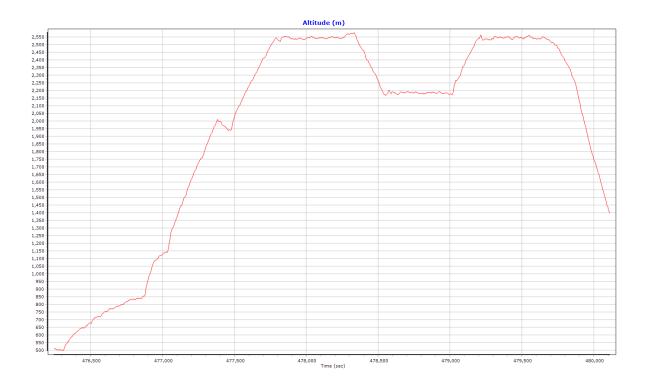


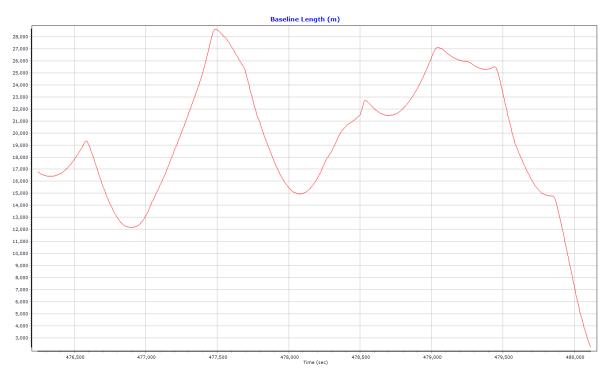


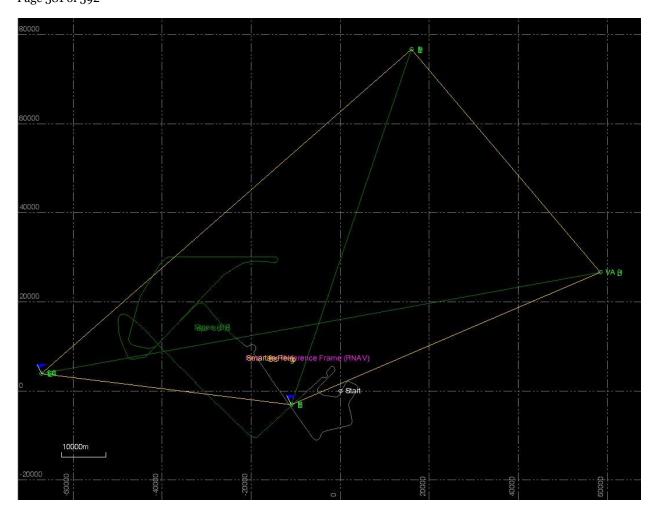


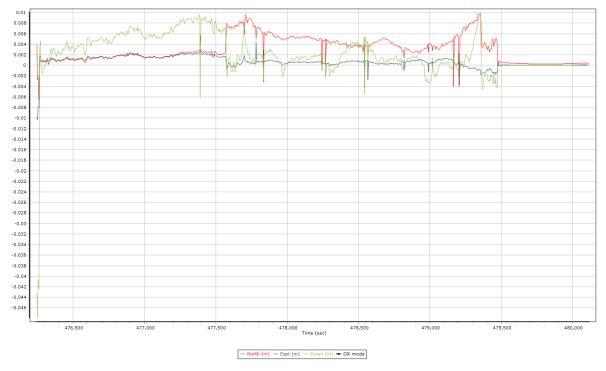


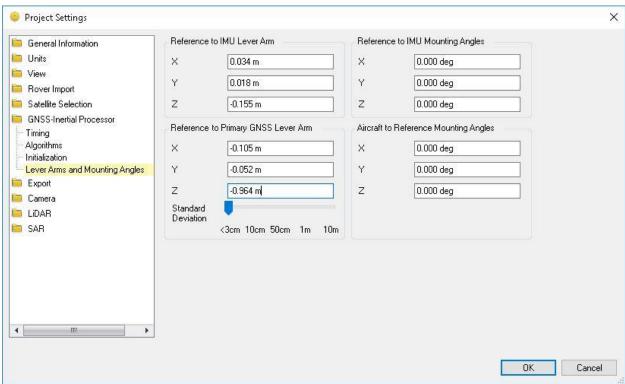
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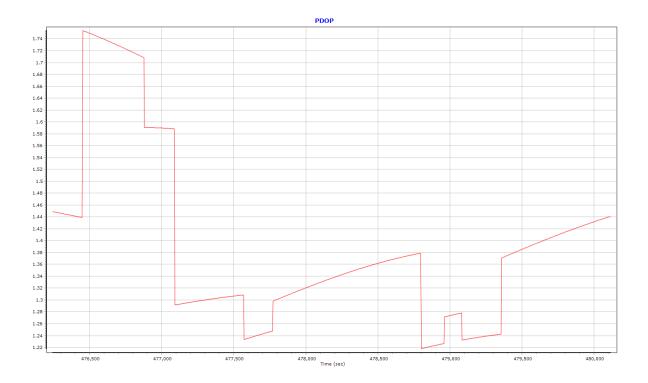


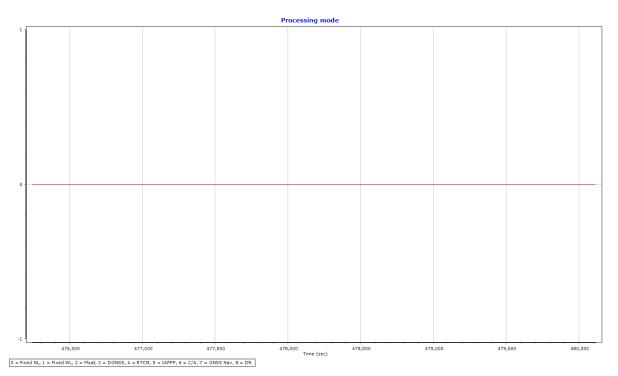


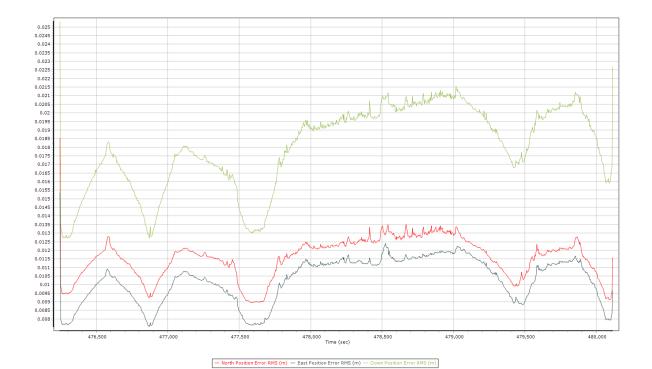


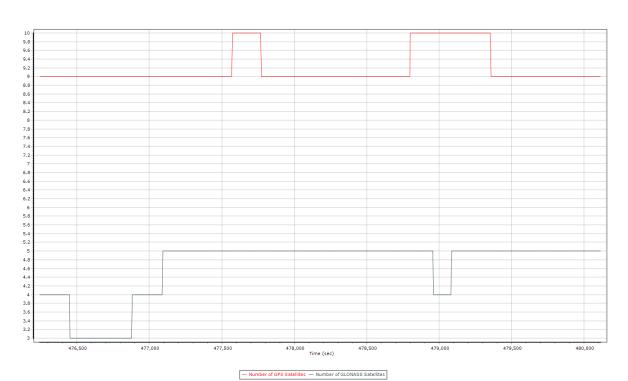


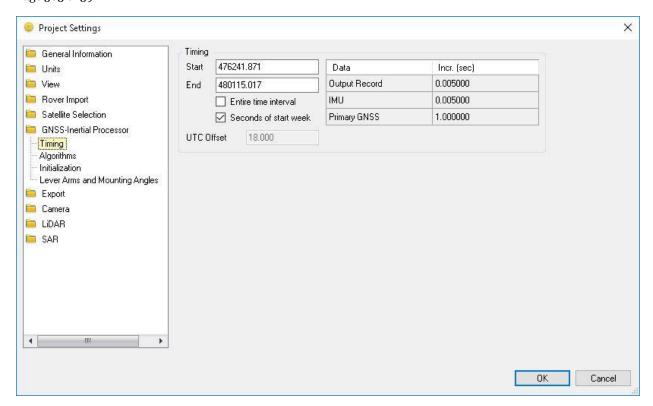


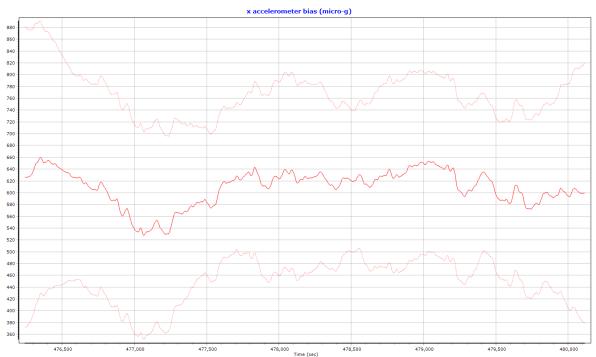


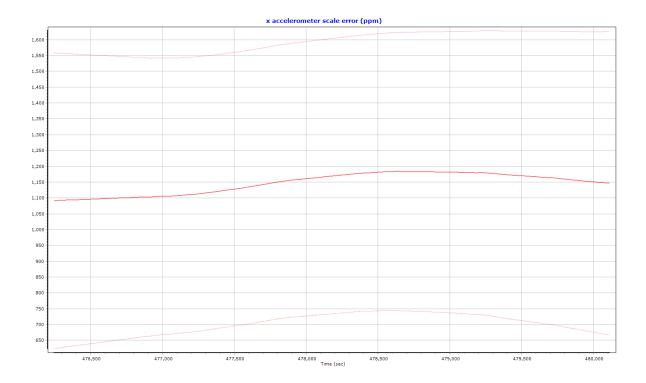


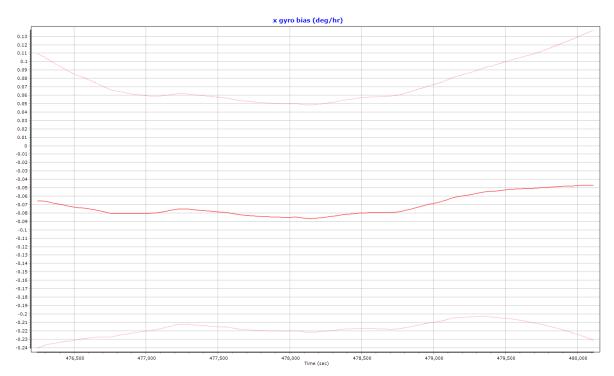


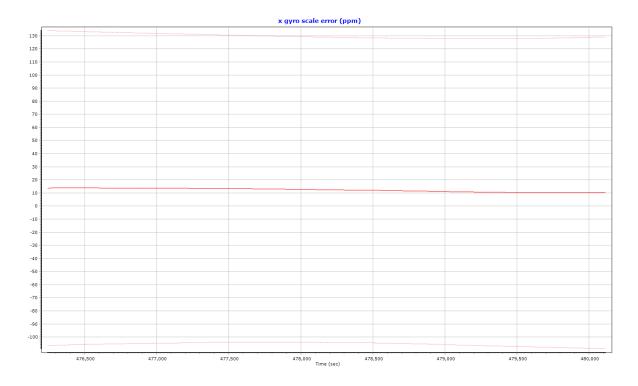


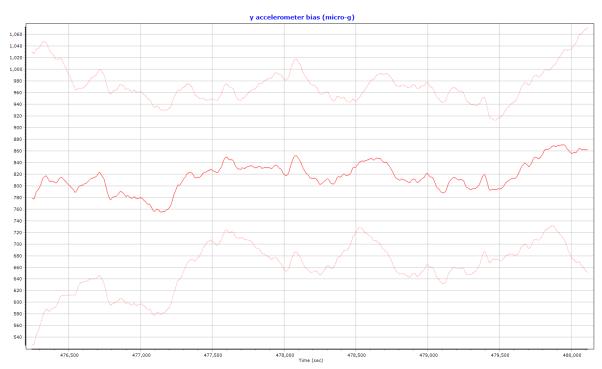


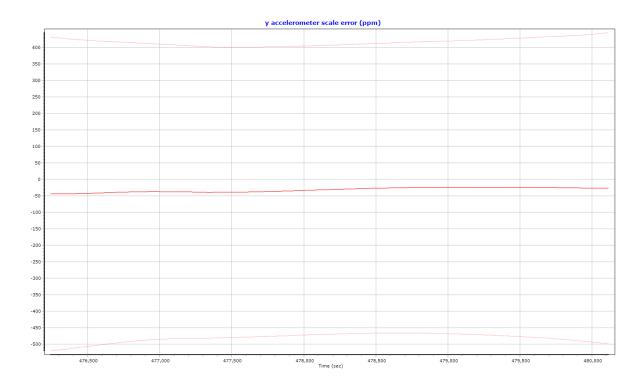


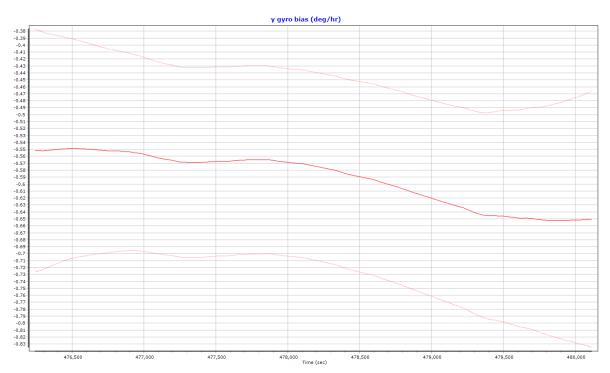


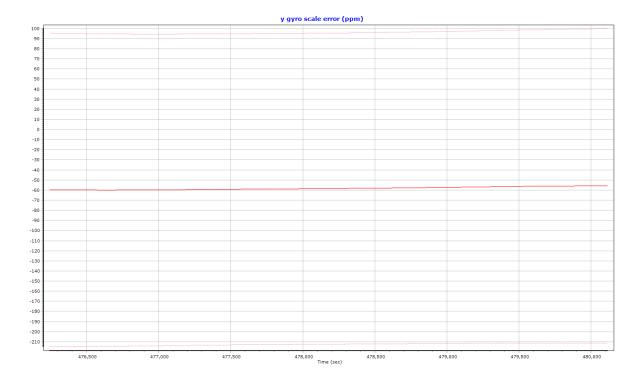


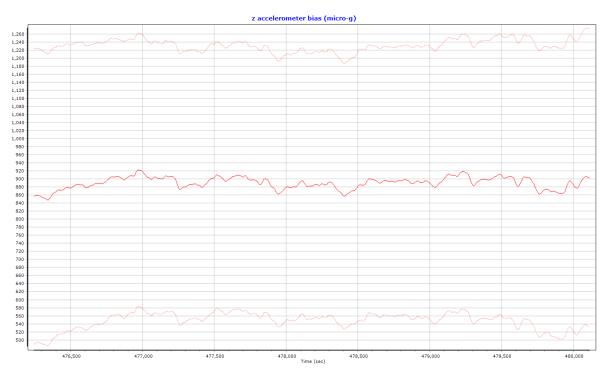


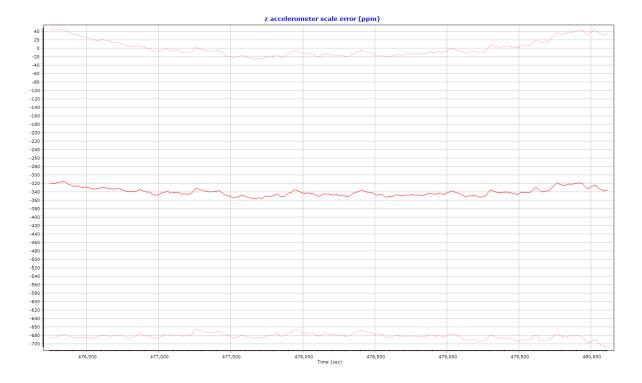


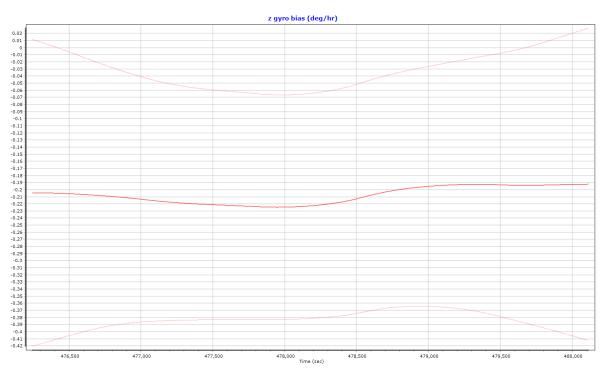


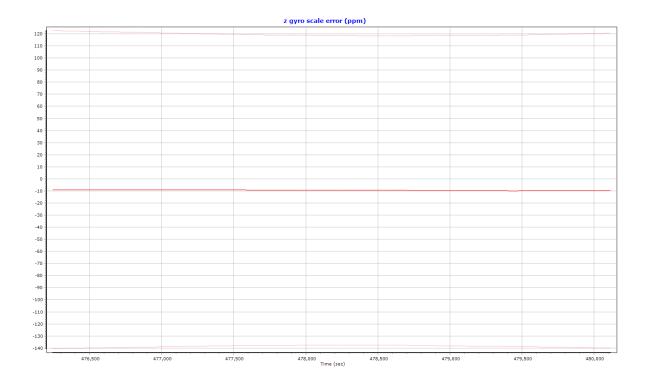












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