

INS comparison in Hydrographic applications

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INS COMPARISON HYDROGRAPHIC SURVEY

SBG Systems product lines

Hardware solution

Post Processing software

Performance Comparison

Acquisition of data set description

Reference description

Sensor comparison in Open Sky with motion

Survey under bridge

Survey in Hamburg channels (harsh GNSS environment)

HARDWARE SOLUTION FOR HYDROGRAPHY

ELLIPSE



EKINOX



APOGEE



HORIZON

All –in-one with Embedded Real time processing.
Internal or external GNSS receiver



Navsight processing unit
Internal or external GNSS receiver
+ Deported IMU

POST PROCESSING SOFTWARE



- » Tight Coupling INS/GNSS fusion
- » + 7,000 Base Stations always up-to-date
- » Virtual Base Station
- » Open to all Industry Standards
- » The Fastest Processing
- » Modern & Intuitive Interface

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ACQUISITION OF DATASET DESCRIPTION

LOCATION AND OBJECTIVES OF DATA ACQUISITION

- Three days of acquisition in Hamburg port area (Germany) with MacArtney Germany GmbH
- Acquisition performed in 3 different areas:



Open sky: Hamburg docks



Bridge survey: Elbbrücken



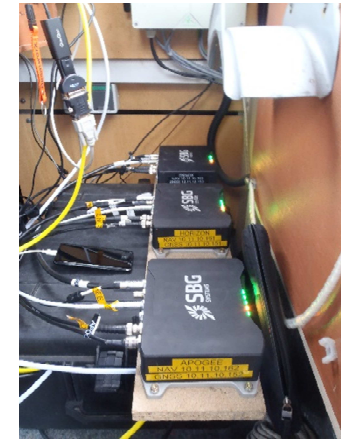
River channels: Speicherstadt

- Objectives: show performance of SBG Systems sensors in various multibeam acquisition environments

— ACQUISITION OF DATASET DESCRIPTION

DATASET ACQUISITION

- Survey vessel with:
- Multibeam Echosounder (**Reson Seabat 7125**)
- Acquisition software (**Teledyne PDS2000**)
- 4 SBG INS systems (**Navsight Ekinox, Apogee, Horizon and Ellipse2-D**)



- Hydrographic data were post processed with **BeamWorx Autoclean**
- INS data were processed using **Qinertia**
- Reference sensor: **Navsight Horizon**, FOG system

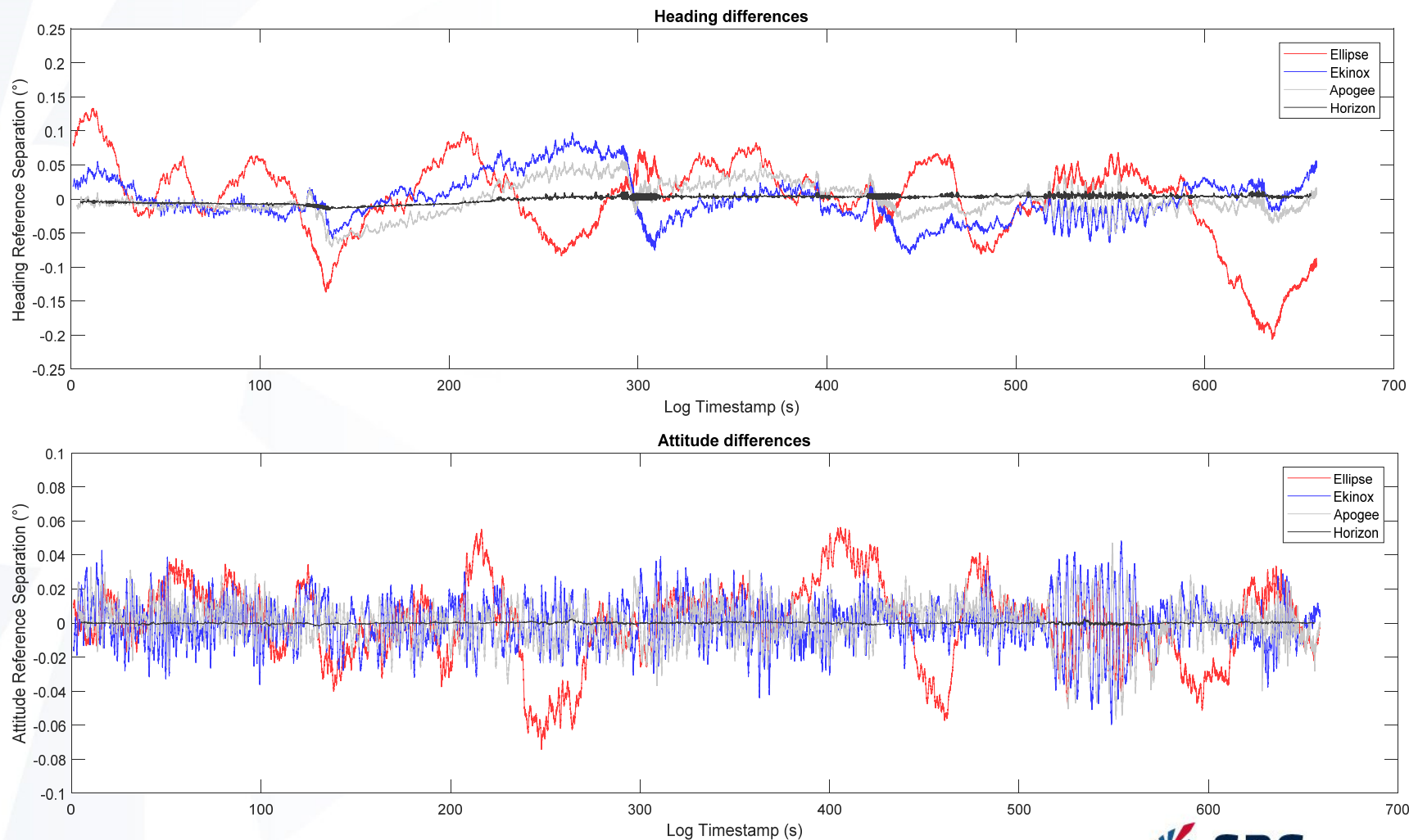
SENSOR COMPARISON OPEN SKY

SURVEY IN HAMBURG DOCKS



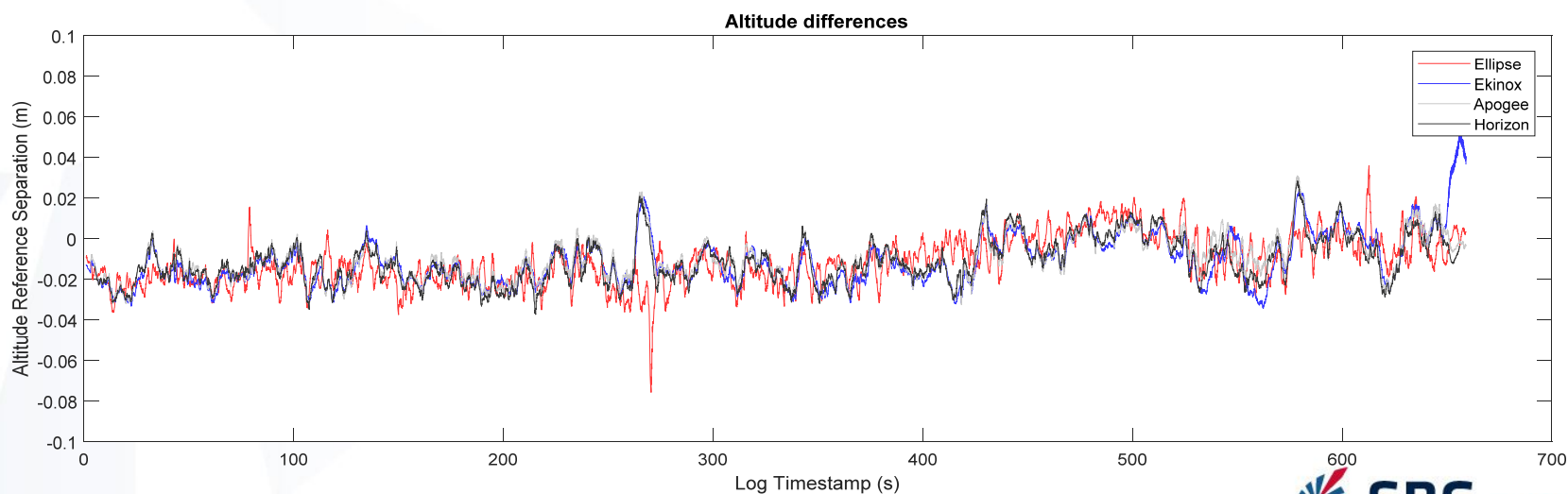
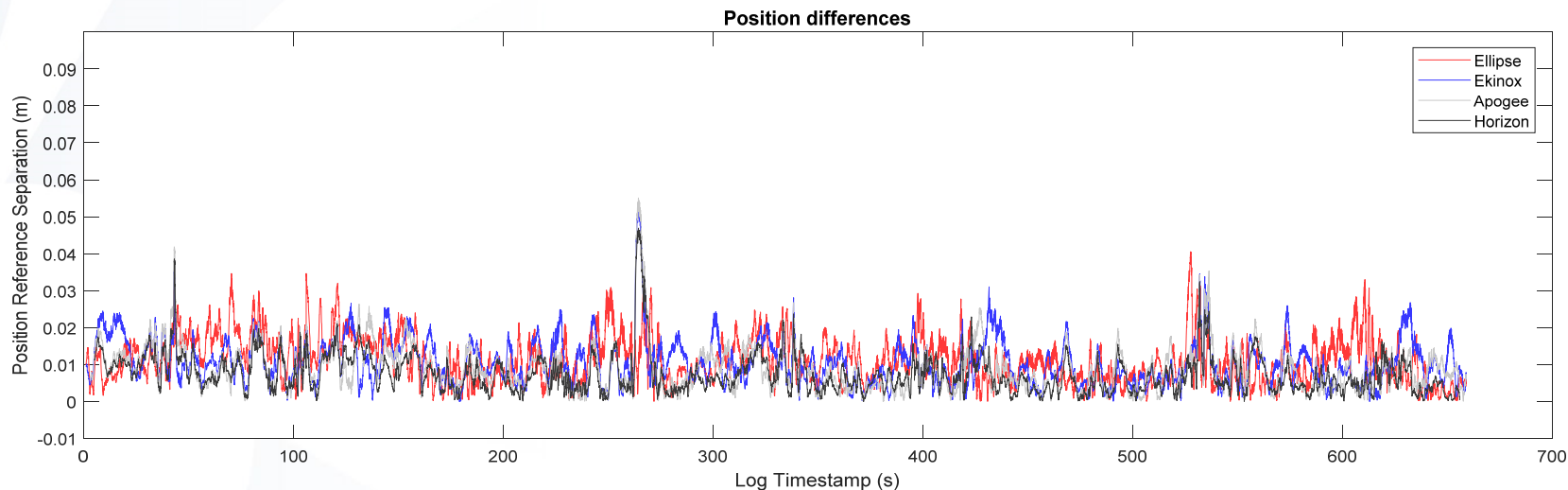
SENSOR COMPARISON OPEN SKY

REAL TIME ATTITUDE COMPARISON TO REFERENCE SENSOR



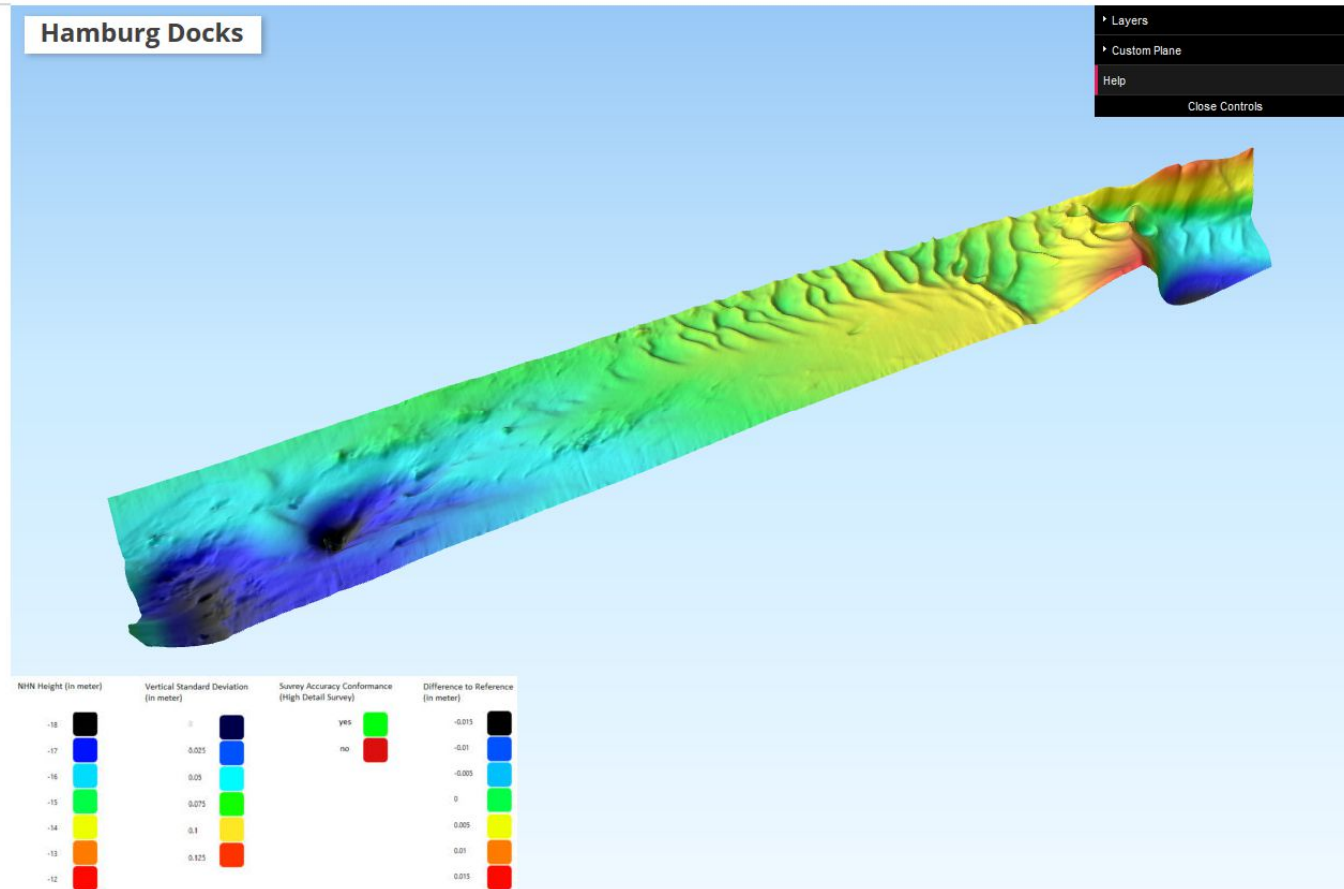
SENSOR COMPARISON OPEN SKY

REAL TIME POSITION COMPARISON TO REFERENCE SENSOR



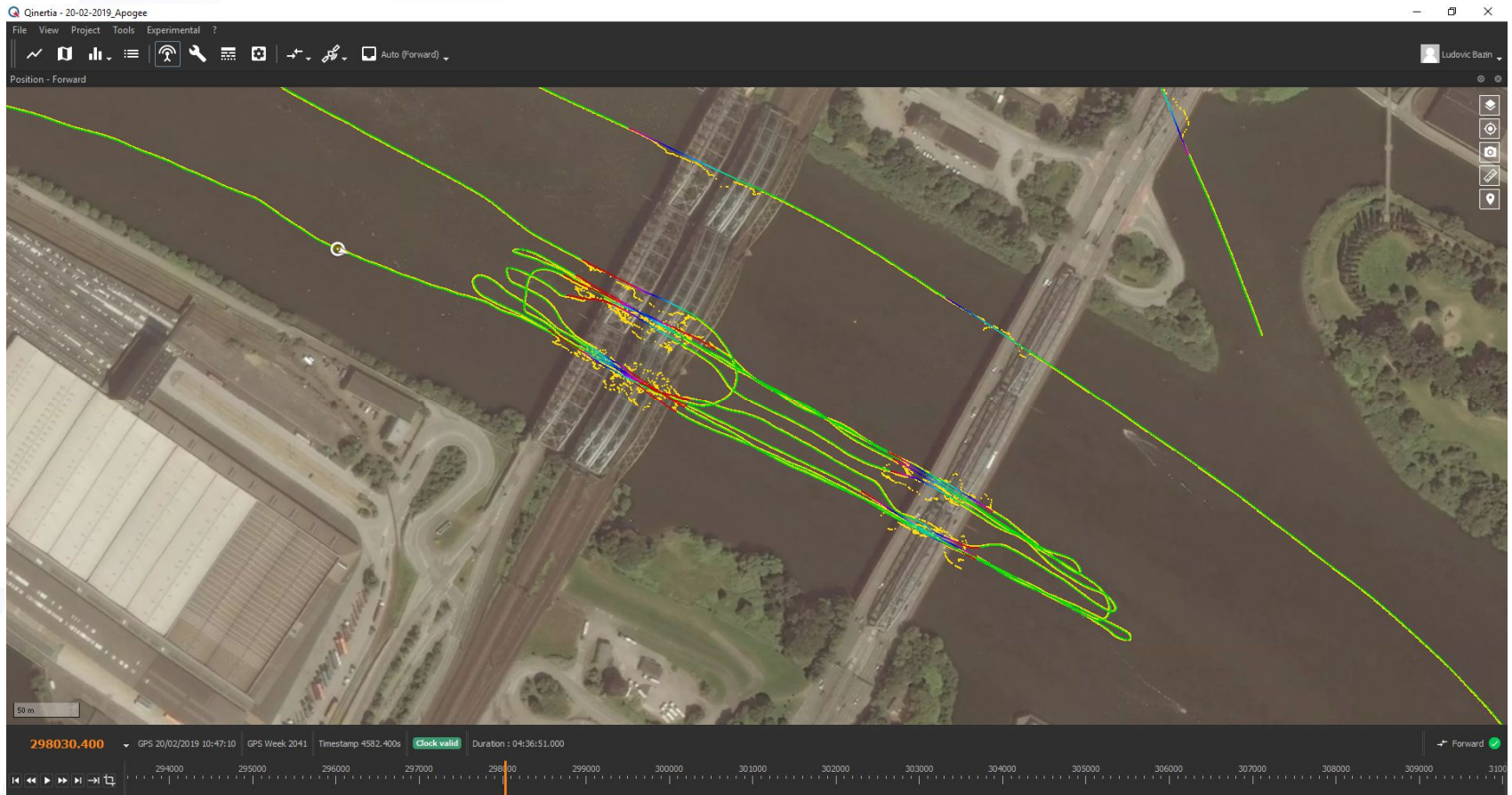
SENSOR COMPARISON OPEN SKY

BATHYMETRY RESULTS



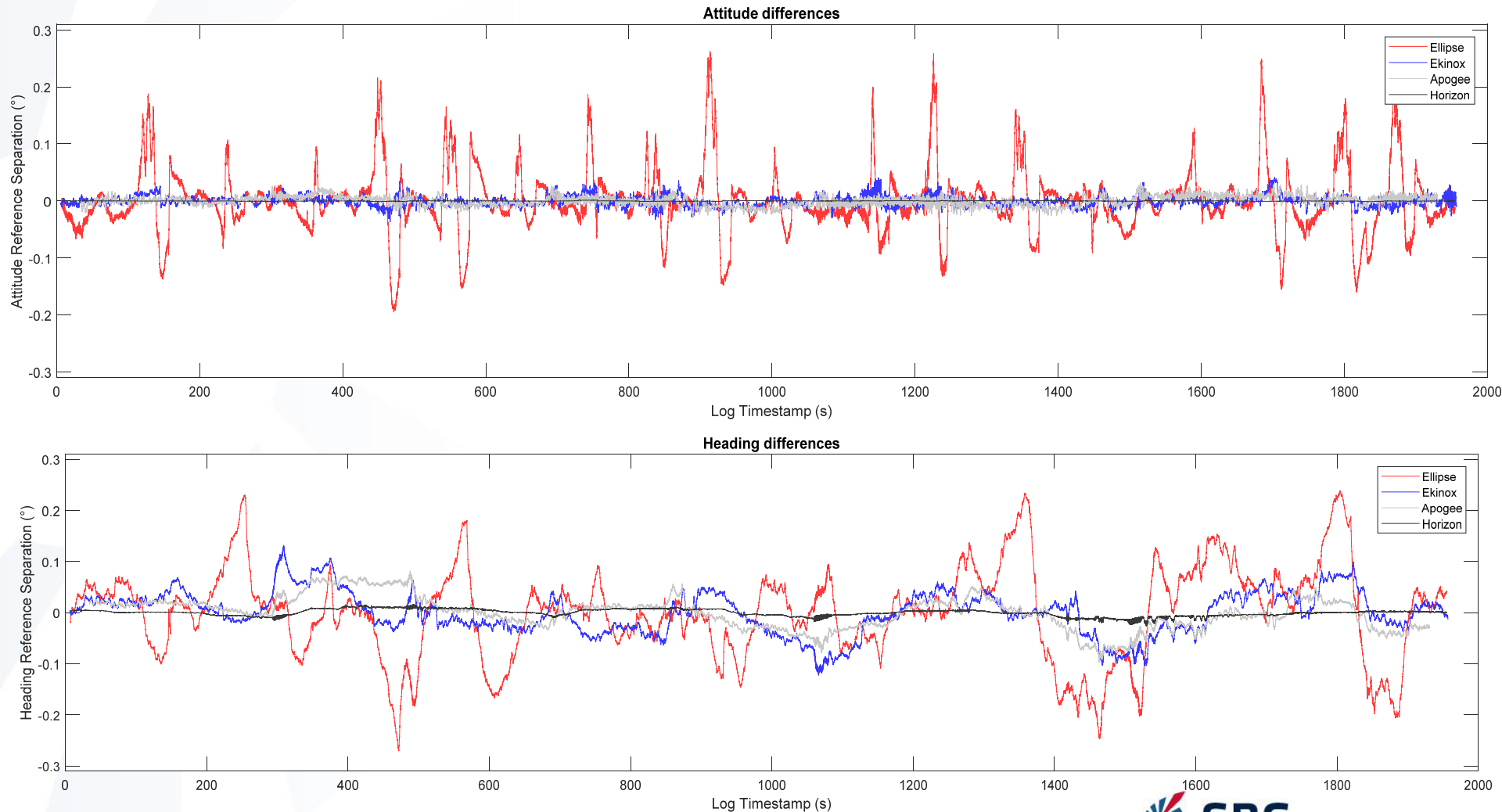
SENSOR COMPARISON BRIDGE SURVEY

SURVEY UNDER BRIDGE WITH GNSS OUTAGES AROUND 45S MAX



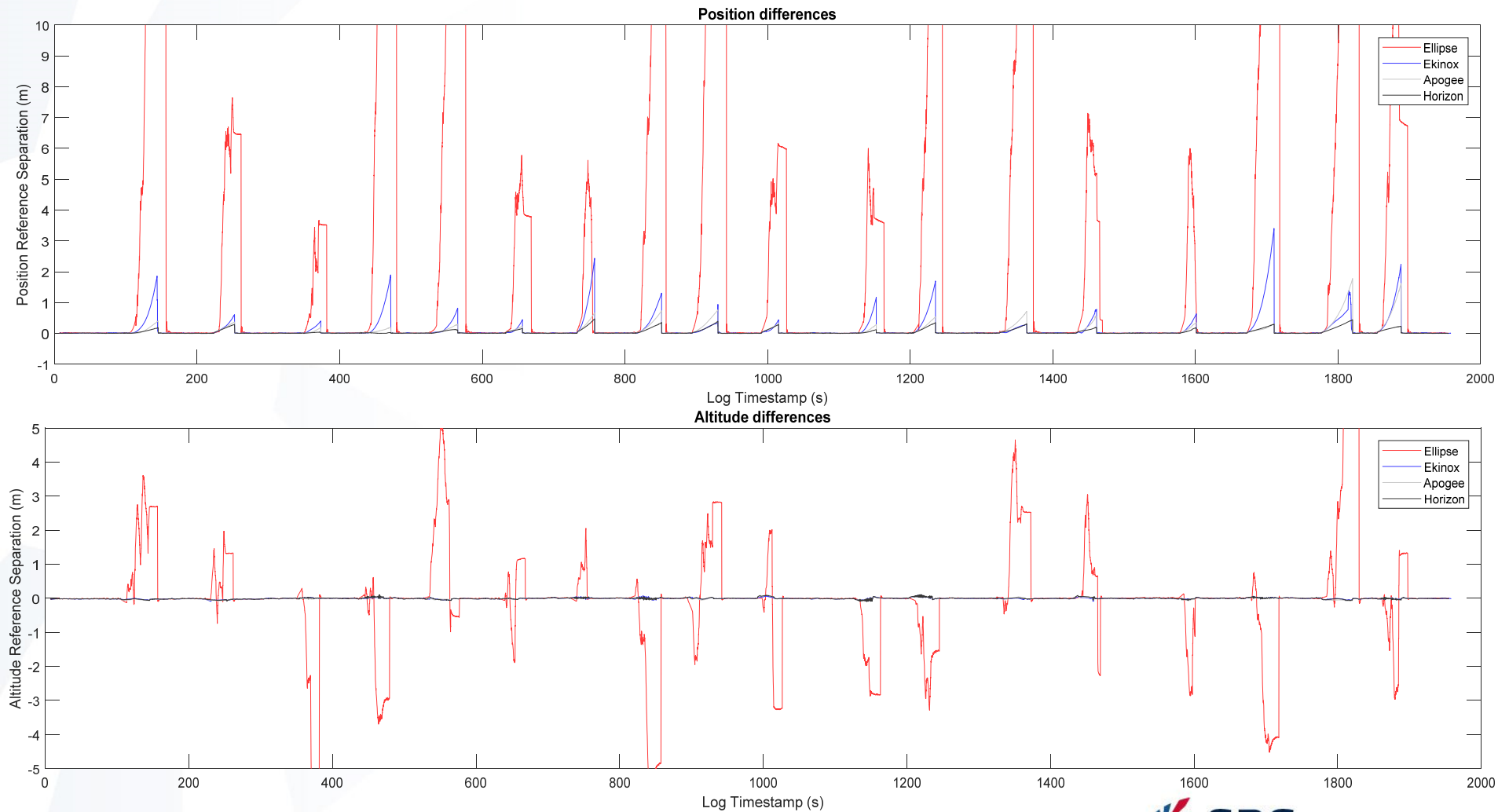
SENSOR COMPARISON BRIDGE SURVEY

REAL TIME ATTITUDE COMPARISON TO REFERENCE



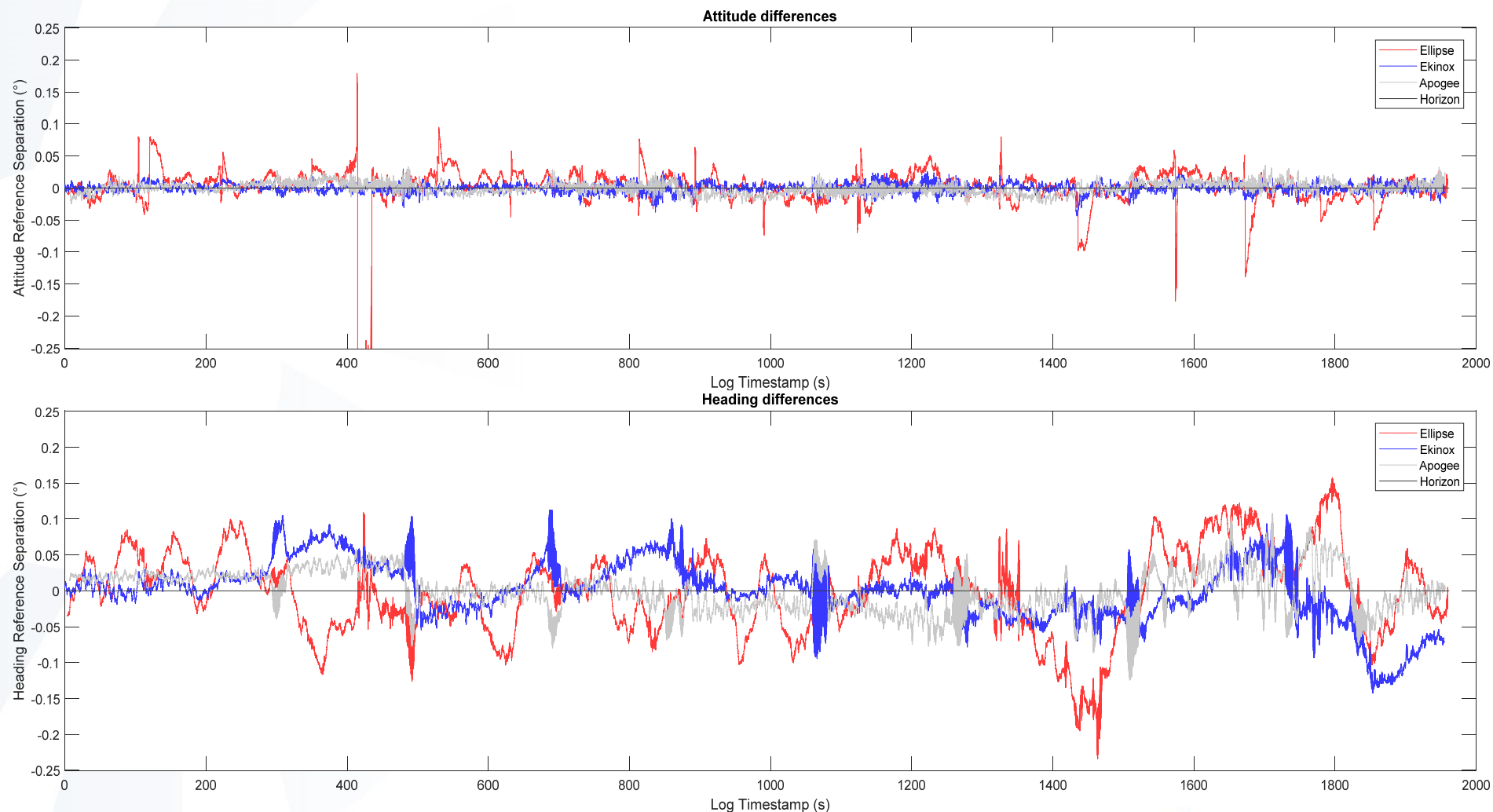
SENSOR COMPARISON BRIDGE SURVEY

REAL TIME POSITION COMPARISON TO REFERENCE



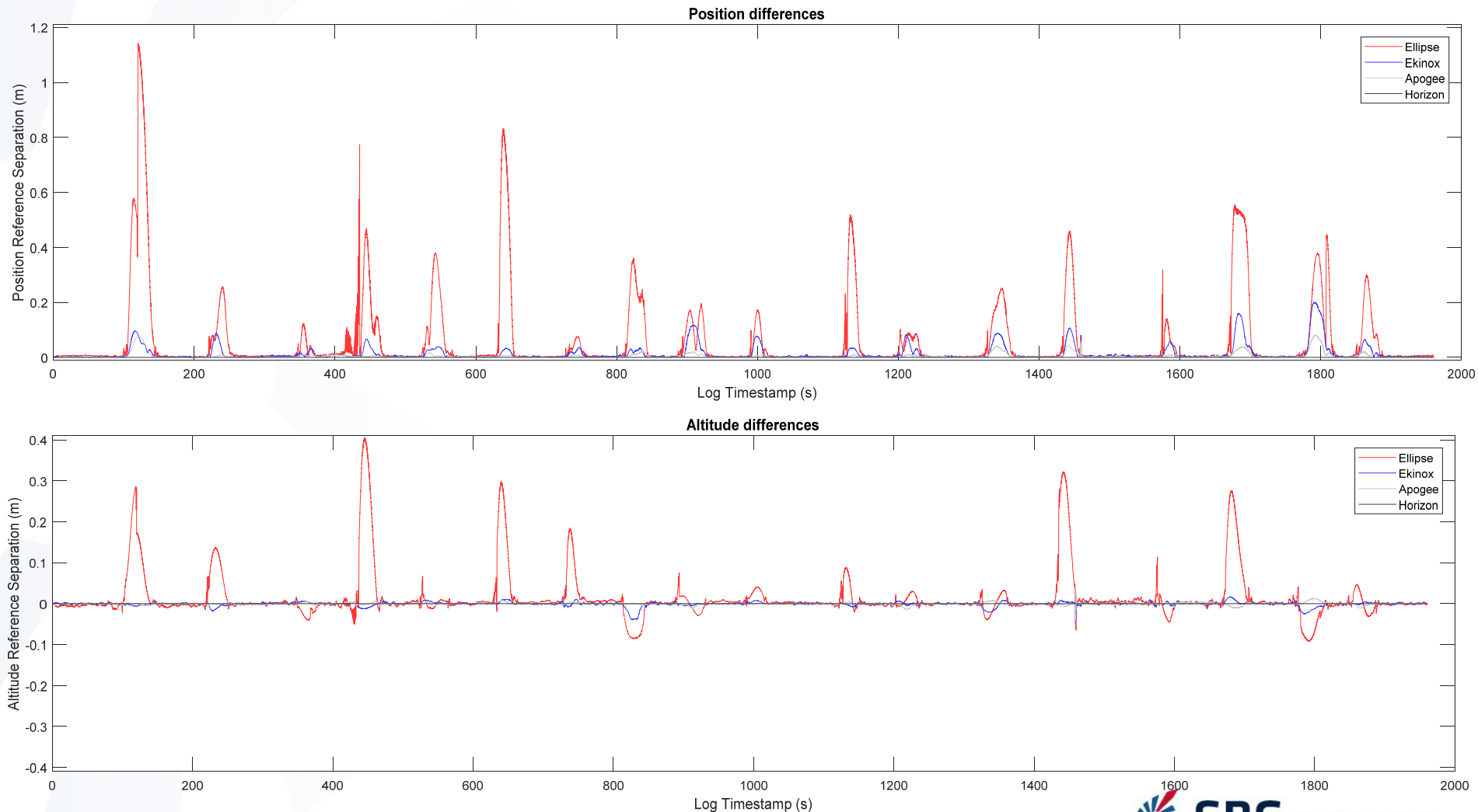
SENSOR COMPARISON BRIDGE SURVEY

PPK ATTITUDE COMPARISON TO REFERENCE



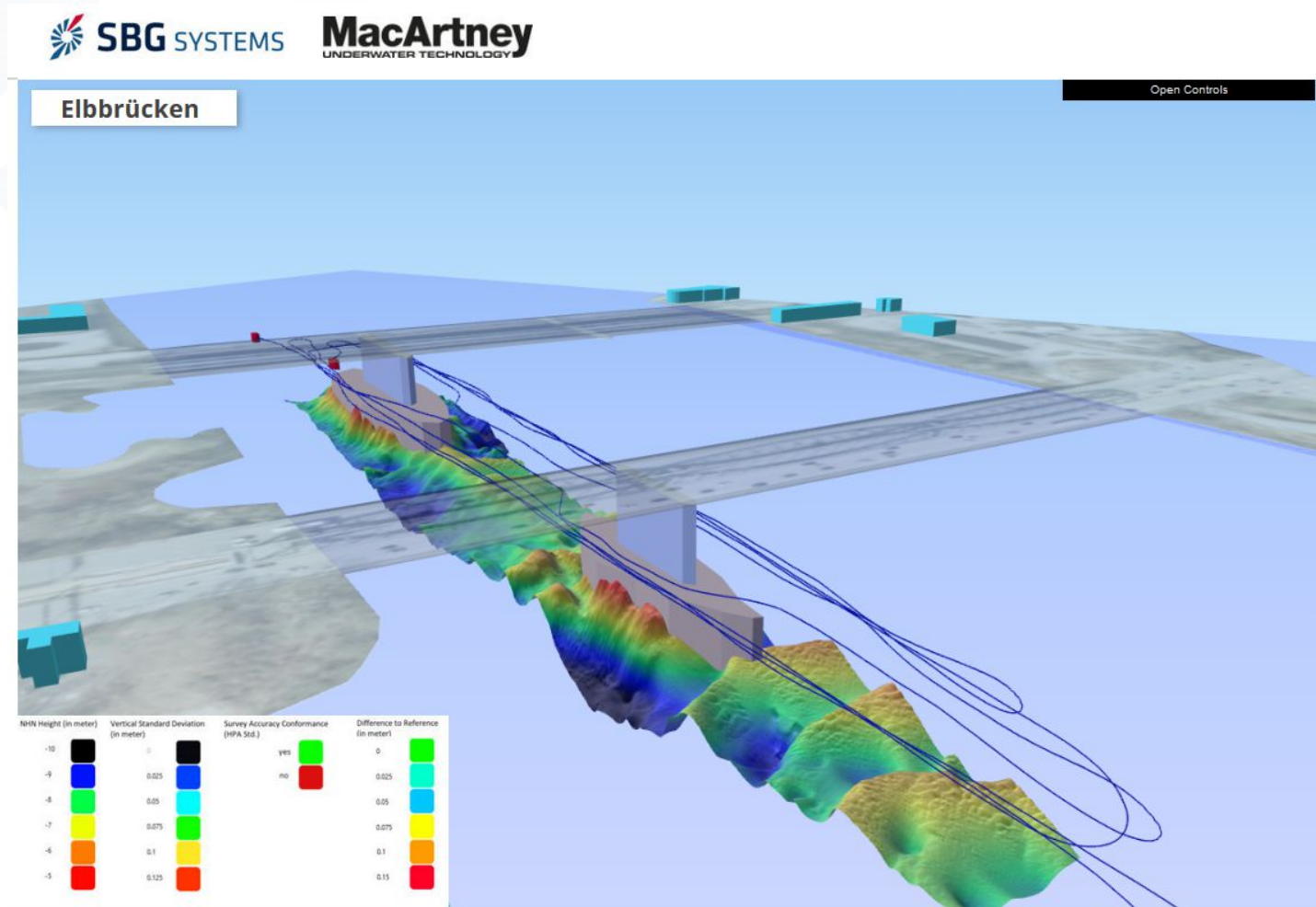
SENSOR COMPARISON BRIDGE SURVEY

PPK POSITION COMPARISON TO REFERENCE



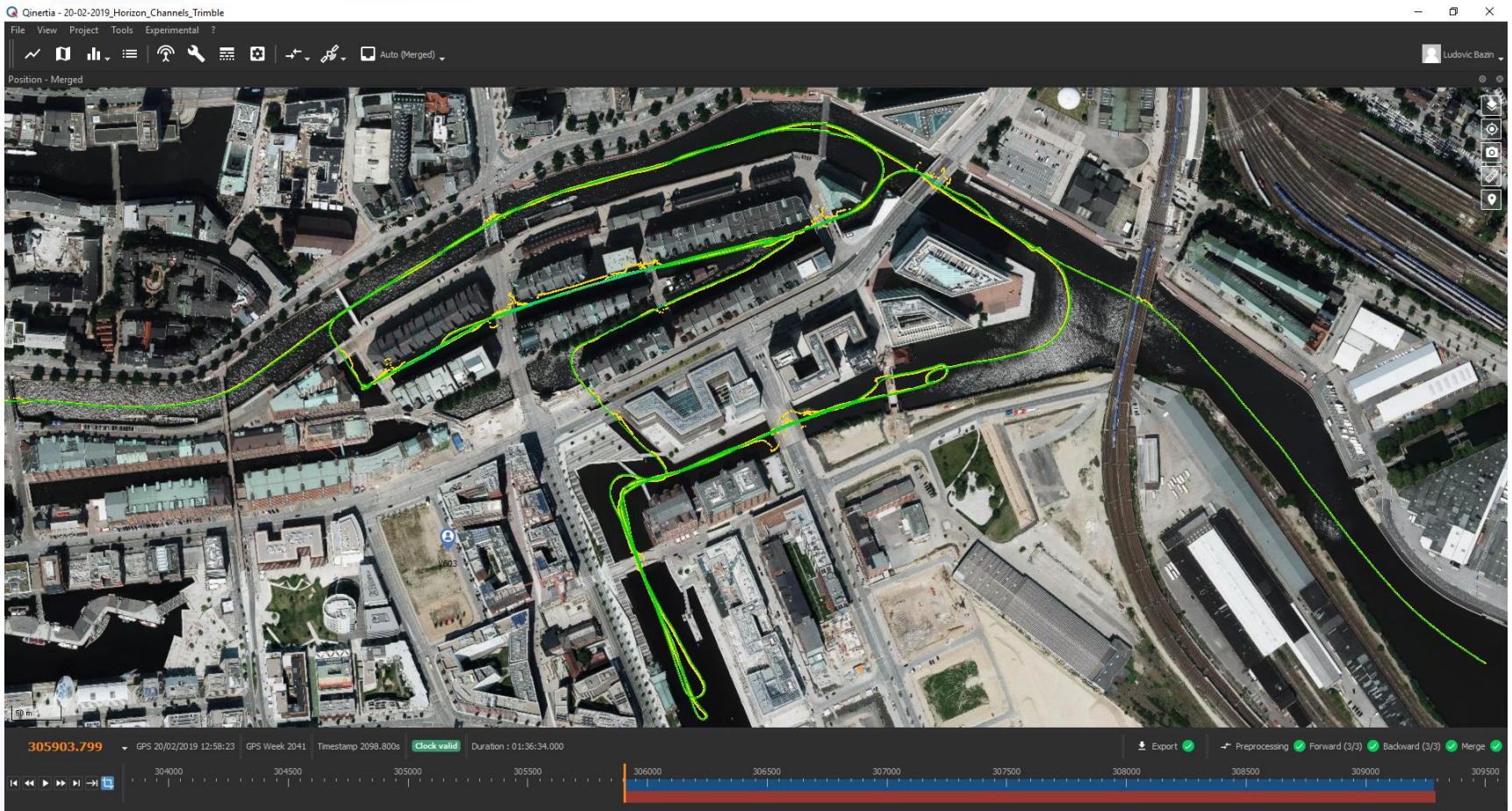
SENSOR COMPARISON BRIDGE SURVEY

BATHYMETRY RESULTS



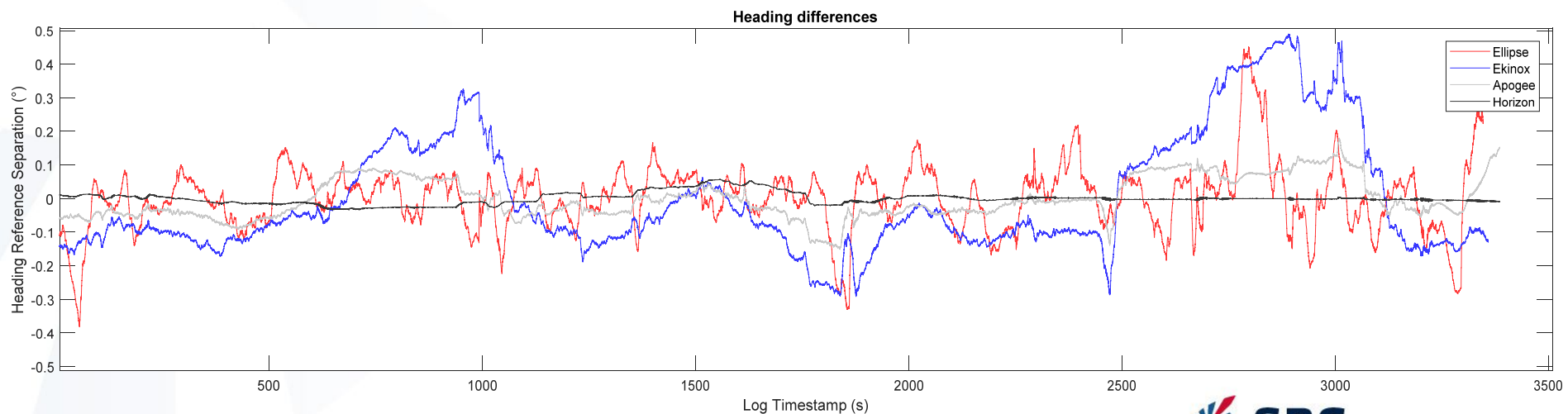
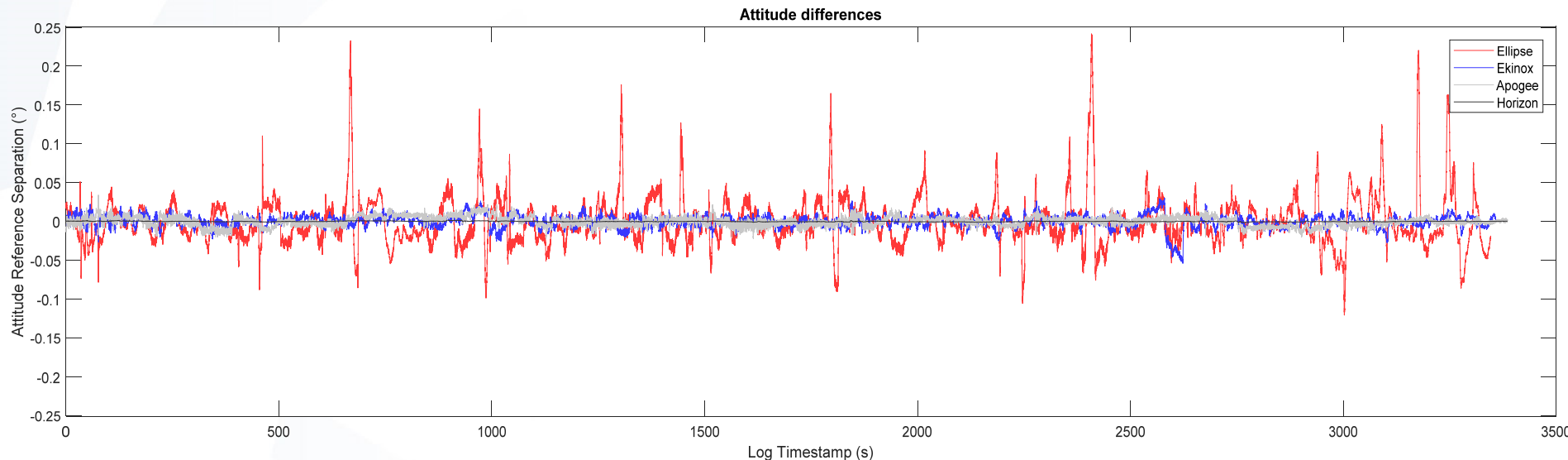
SENSOR COMPARISON RIVER CHANNELS

SURVEY IN HAMBURG CHANNELS STRONG GNSS MULTIPATH EFFECTS AND OUTAGES



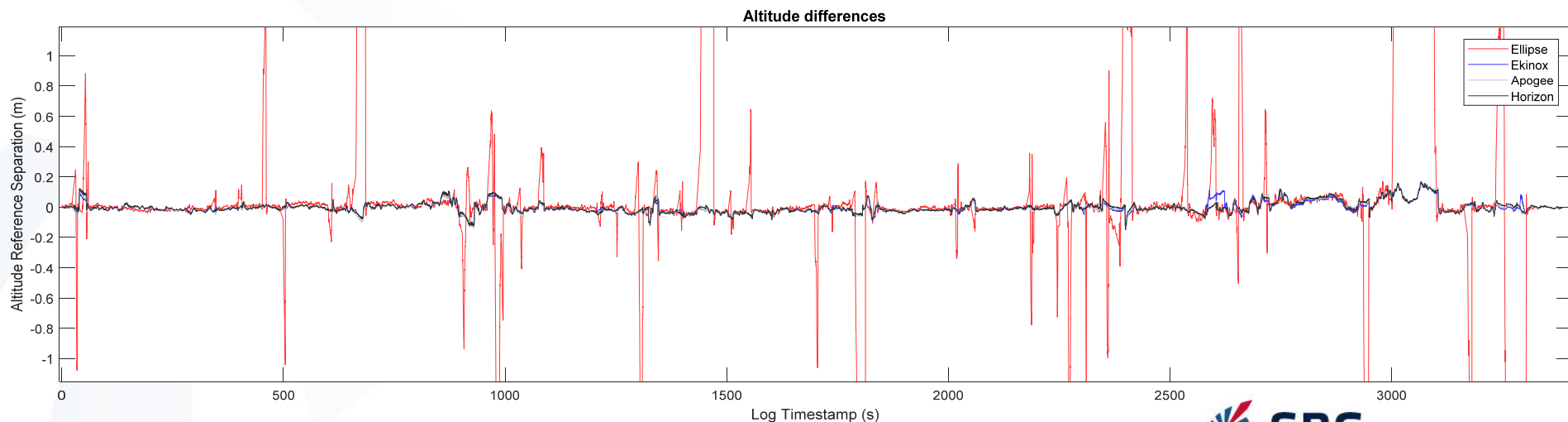
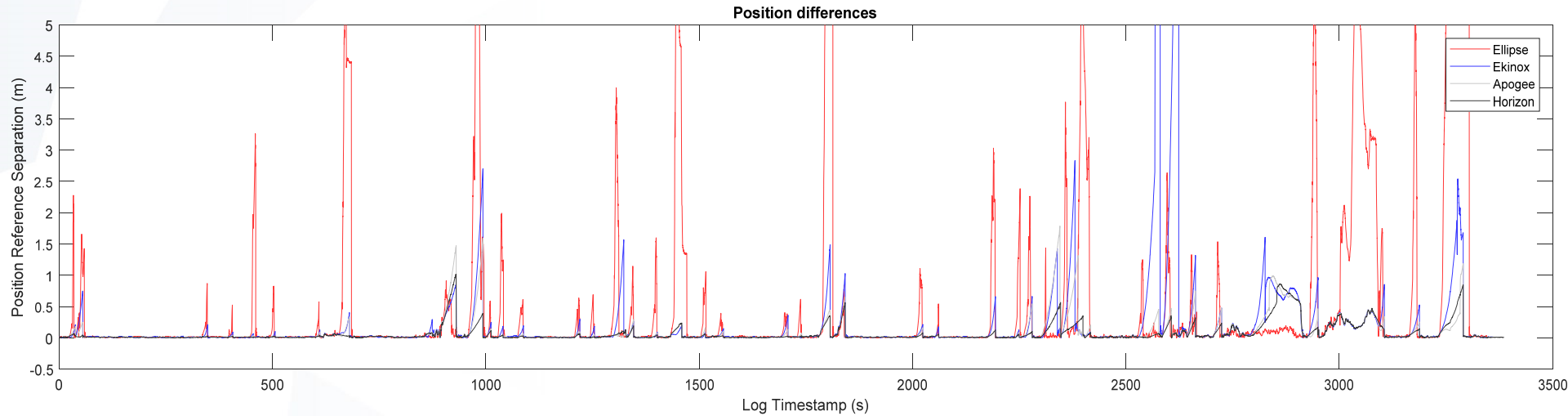
SENSOR COMPARISON RIVER CHANNELS

REAL TIME ATTITUDE COMPARISON TO REFERENCE



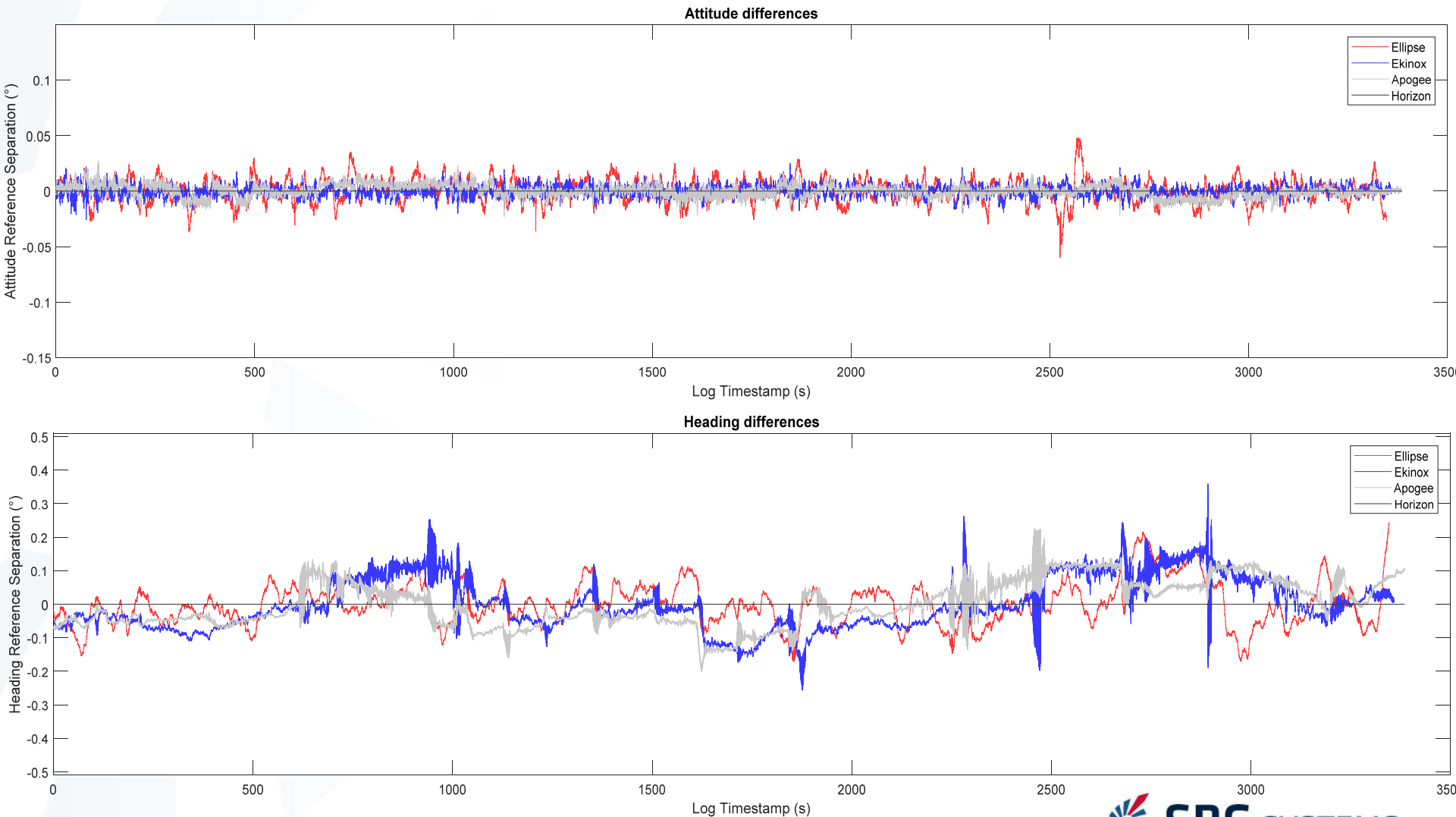
SENSOR COMPARISON RIVER CHANNELS

REAL TIME POSITION COMPARISON TO REFERENCE



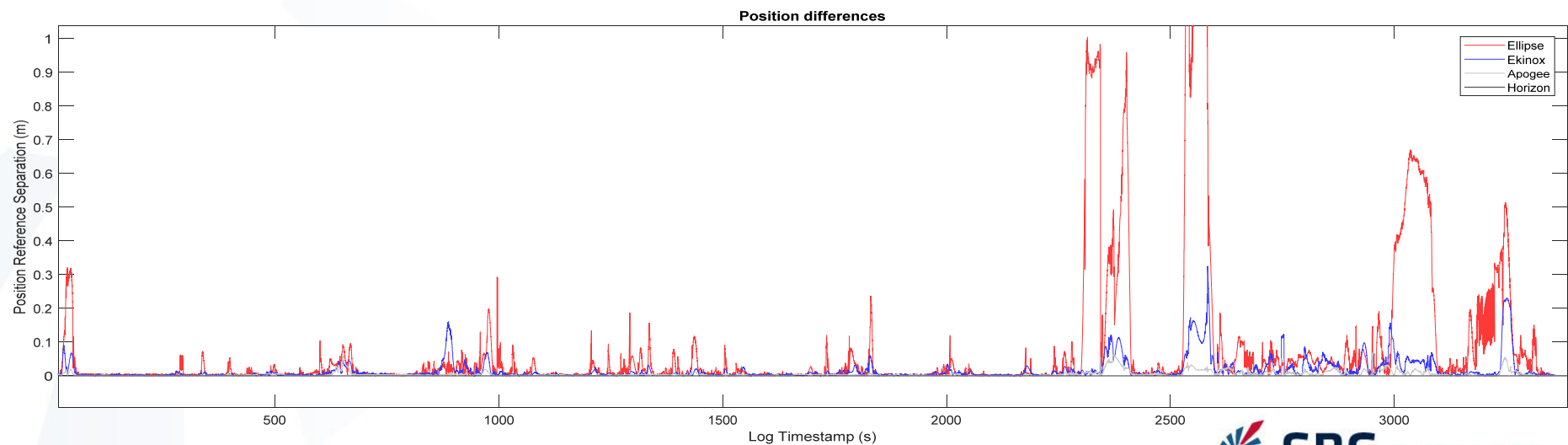
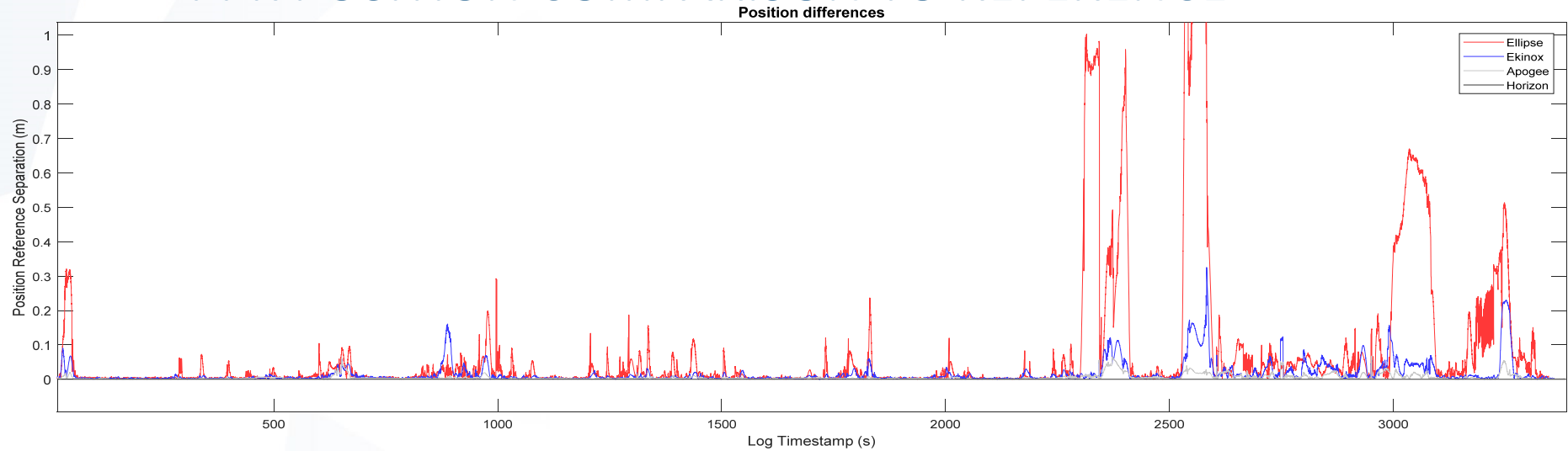
SENSOR COMPARISON RIVER CHANNELS

PPK ATTITUDE COMPARISON TO REFERENCE



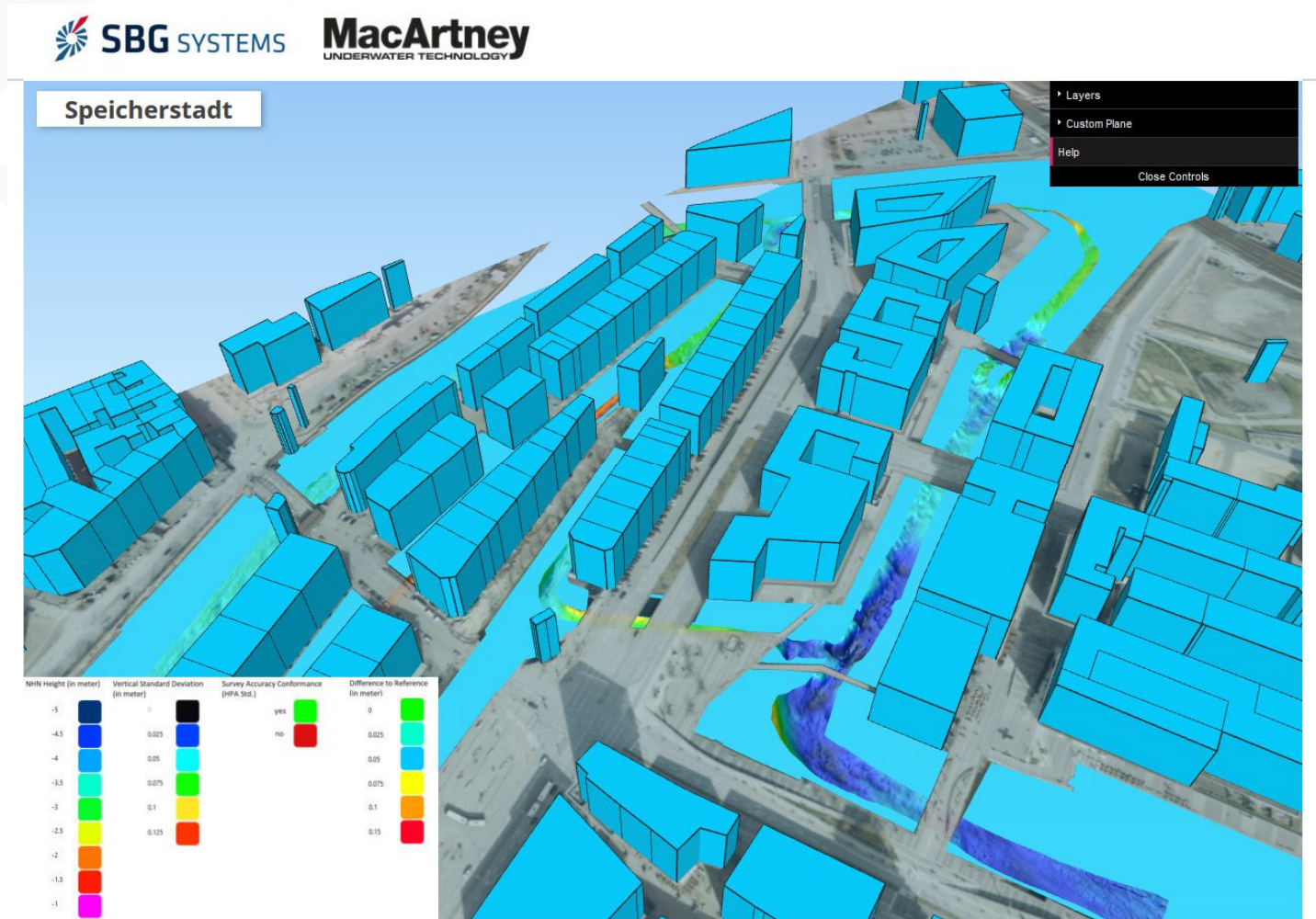
SENSOR COMPARISON RIVER CHANNELS

PPK POSITION COMPARISON TO REFERENCE



SENSOR COMPARISON RIVER CHANNELS

BATHYMETRY RESULTS



THANK YOU

FULL STUDY IS AVAILABLE ON OUR WEB SITE:

[HTTPS://WWW.SBG-SYSTEMS.COM/SUPPORT/TEST-REPORTS/MARINE-BATHYMETRY/](https://www.sbg-systems.com/support/test-reports/marine-bathymetry/)

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