

RINEX VERIFICATION – Help

This script will compare RINEX processed data and TRINAV/SPN logged data to produce difference plots for Lat and Lon, in metres.

The user selects TRINAV/SPN in Navigation System. The NAVIGATION logged file will be recorded in TRINAV/SPN. The RINEX file will be recorded in FUGRO/VERIPOS systems and will be processed before entering in this script.

The names of the GPS systems have to match those of the headers of the file logged in TRINAV/SPN

RINEX comparison with Trinav

Systems	Descriptions
FU1G4_PE	Starpack computations XP
FU1XP_PE	Starpack computations G4
FU2G4_PE	Starfix NG computations XP
FU2XP_PE	Starfix NG computations G4

Navigation System: **TRINAV**

Vessel: SW EMPRESS
 Location: Namibia
 Client: SEARCHER
 Job number: 5318

Rinex processed

Open RINEX processed file System 1	S_EMP_040U.csv
Open RINEX processed file System 2	S_EMP_040U.csv
Open RINEX processed file System 3	M_EMP_040U.csv
Open RINEX processed file System 4	M_EMP_040U.csv
Open NAVIGATION logged file	09Feb_trinav.csv

Navigation Logged

Scope of Work Section: THIS SECTION IS EDITABLE

This verification is performed by logging raw Veripos GNSS data in RINEX format, and having the data post processed by a recognised 3rd party. Shearwater's standard is to use the Natural Resources of Canada (NRCAN) online service for post processing RINEX data.

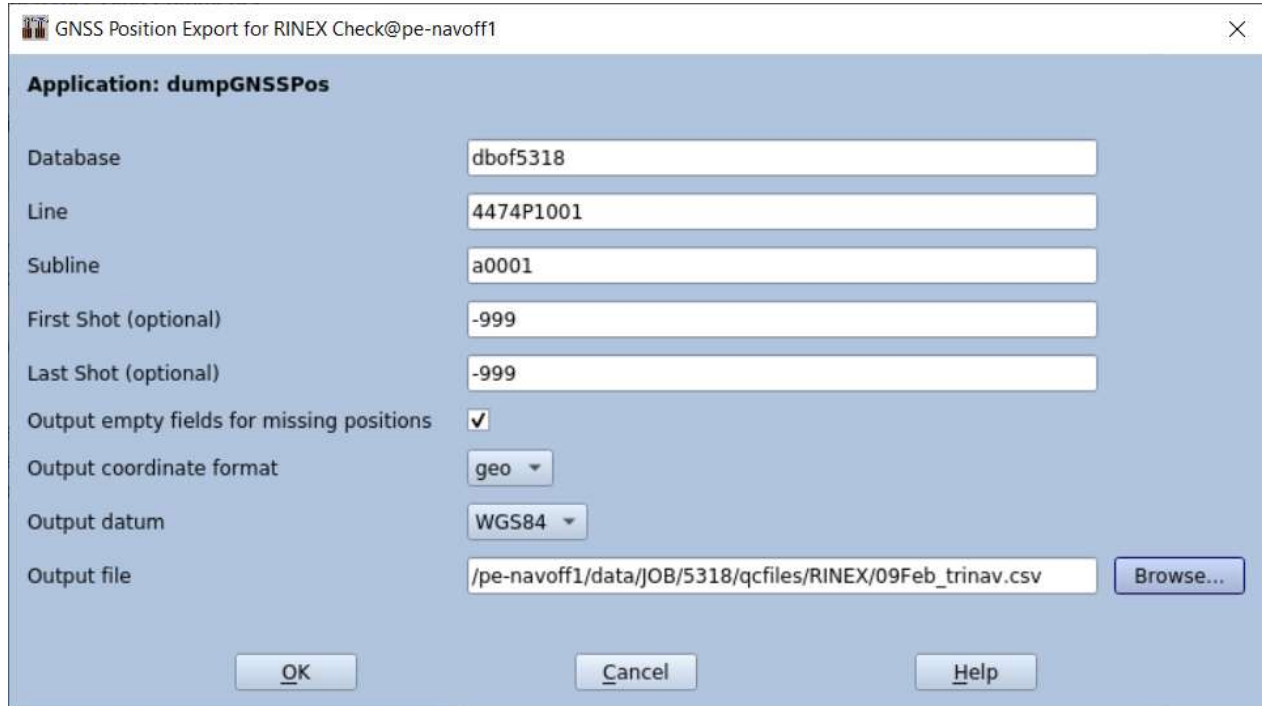
Logged raw data RINEX data from Veripos/Fugro systems is uploaded directly from the vessel, and the processed result received back from NRCAN almost instantly. The post processed positions from each of the Veripos receivers are then compared with DGNS generated positions logged in the NAVIGATION system. The comparison graphs are provided in this document and provide proof of the validity of the corrections and hence that the onboard installation is valid. Gyro plots are also provided to show movements of the vessel during logging.

1. **Log RINEX data** from LD-6 / Verify PC, Fugro, etc.
 - 1.1. If needed convert the data to RINEX 2.1 format from Veripos or Fugro. Follow Veripos/Fugro work instructions, using conversion software provided by them.
 - 1.2. Submit the .??O files to <https://webapp.geod.nrcan.gc.ca/geod/tools-outils/ppp.php?locale=en>
 - 1.2.1. log in or make an account if you do not have one.
 - 1.2.2. Navigate to the "Geodetic tools and data" page, then to the CSRS-PPP page.
 - 1.2.3. Select "Kinematic" and "ITRF".
 - 1.2.4. Load your RINEX files as instructed.
 - 1.2.5. Await email with results and download.
 - 1.3. Use the .csv files processed by Canadian PPP site as input to the RINEX Comparison program

2. Log TRINAV

2.1 Please ensure that the data set does not cross over midnight.

2.2 line in RT while logging the RINEX data. From QCPR :



Application: dumpGNSSPos

Database: dbof5318

Line: 4474P1001

Subline: a0001

First Shot (optional): -999

Last Shot (optional): -999

Output empty fields for missing positions: ☒

Output coordinate format: geo

Output datum: WGS84

Output file: /pe-navoff1/data/JOB/5318/qcfiles/RINEX/09Feb_trinav.csv Browse...

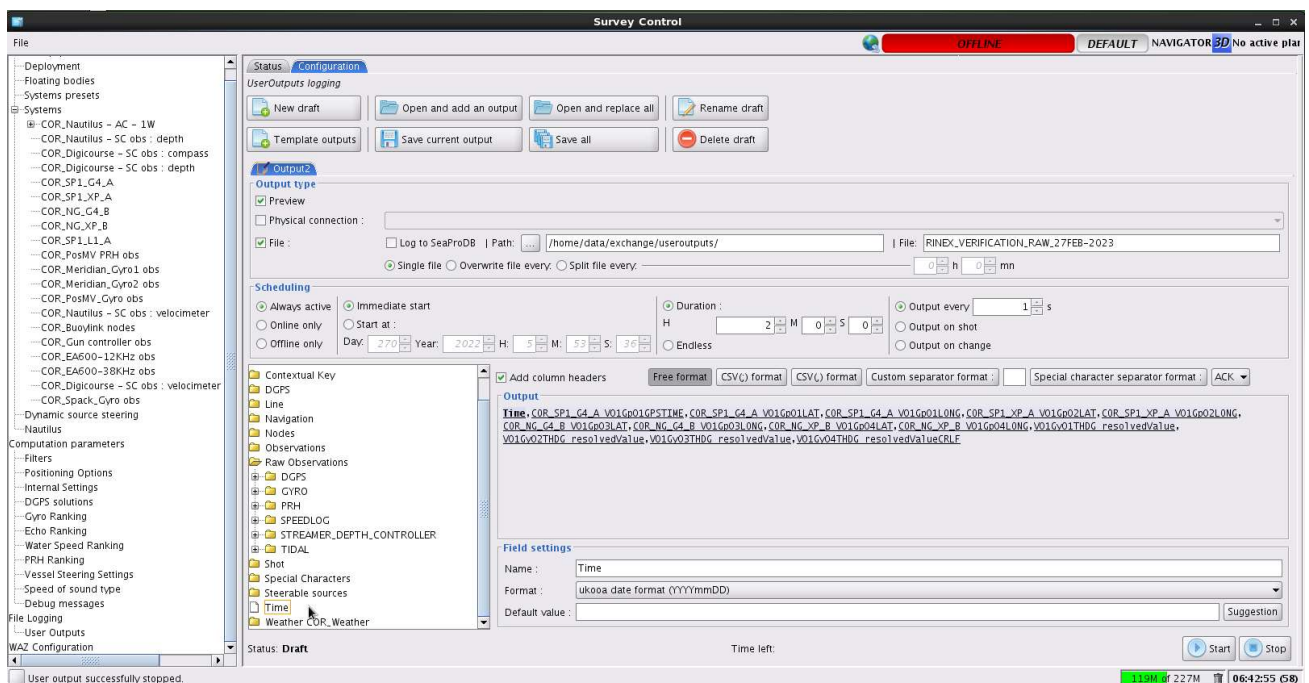
OK Cancel Help

3. Log SPN

3.1 Please ensure that the data set does not cross over midnight.

3.2 If Using SPN, log as follows:

- All antenna offsets need to be set to be zero in both the SPN and the GNSS configurations. In SPN Survey Control create a user output as shown in the screen shots below.
- SPN outputs GPS time from the Raw DGPS Observations. The GPS time field is "Seconds of Week" with the week being the "GPS Week mod 1024".
- The duration has been set to 2 hours logging time at 1s output rate to match the logging of the GNSS RINEX files.
- The output positions must be RAW.



Survey Control

Status: Configuration

OFFLINE

DEFAULT

NAVIGATOR 3D No active plan

User Outputs logging

New draft Open and add an output Open and replace all Rename draft

Template outputs Save current output Save all Delete draft

Output type

☒ Preview

Physical connection:

☒ File: Log to SeaProDB Path: /home/data/exchange/useroutputs/ File: RINEX_VERIFICATION_RAW.27FEB-2023

☐ Single file ☐ Overwrite file every: ☐ Split file every: 0 h 0 mn

Scheduling

☒ Always active ☐ Immediate start

☐ Online only ☐ Start at: Day: 270 Year: 2022 H: 5 M: 52 S: 36

☐ Offline only ☐ Endless

☒ Output every 1 s ☐ Output on shot ☐ Output on change

Contextual Key

Line

Navigation

Nodes

Observations

Raw Observations

DGPS

GYRO

PRH

SPEEDLOG

STREAMER_DEPTH_CONTROLLER

TIDAL

Shot

Special Characters

Stereable sources

Time

Weather COR Weather

Add column headers Free format CSV() format CSV() format Custom separator format: Special character separator format: ACK

Output

Time, COR_SP1_G4_A_V01Gp01GPSTIME, COR_SP1_G4_A_V01Gp01LAT, COR_SP1_G4_A_V01Gp01LONG, COR_SP1_XP_A_V01Gp02LAT, COR_SP1_XP_A_V01Gp02LONG, COR_NC_G4_B_V01Gp03LAT, COR_NC_G4_B_V01Gp03LONG, COR_NC_XP_B_V01Gp04LAT, COR_NC_XP_B_V01Gp04LONG, V01Gv01THDG_resolvedValue, V01Gv03THDG_resolvedValue, V01Gv04THDG_resolvedValue, CRLF

Field settings

Name: Time

Format: ukopa date format (YYYYmmDD)

Default value: Suggestion

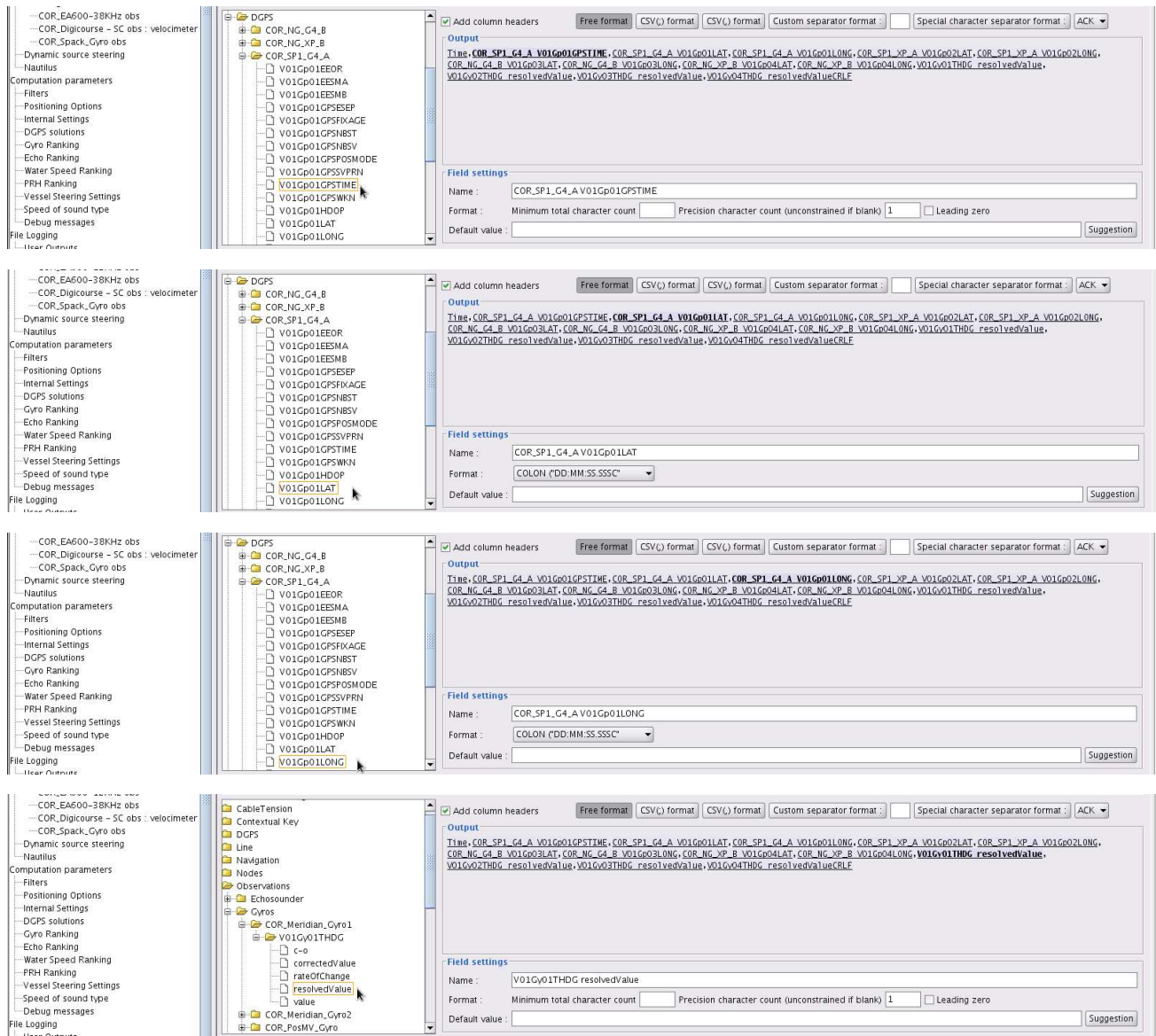
Status: Draft

Time left:

Start Stop

User output successfully stopped.

13:58 227M 06:42:55



4. **Check/Modify Comments** : *Scope of Work* section. This is output to the report. The default comments can be modified.

5. **Check Results** : PDF report with time tag suffix is produced on the same directory where the .exe file is located

-----Bugs, suggestions, testing datasets, etc, please submit feedback or a ticket referencing SWConnect_Content-7291937 - RINEX Verification -----