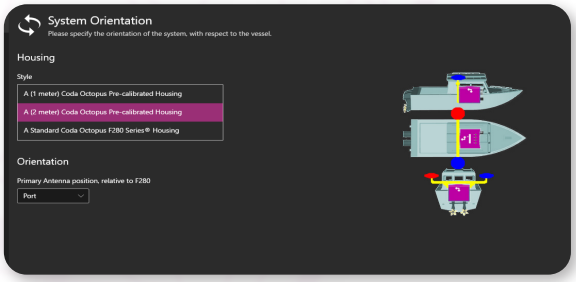
F280 Series® MOTION INSight

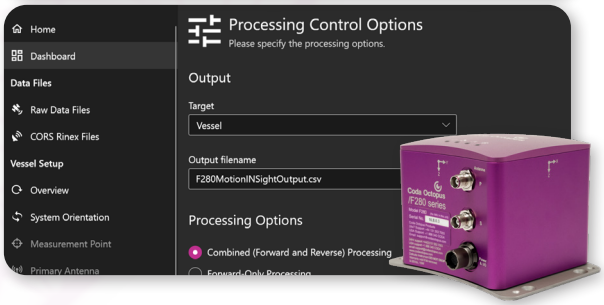
Process. Enhance. Repair

GNSS-Aided Inertial Post-Processing for F280 Series®

F280 Series® Motion INSight is a GNSS-Aided Inertial Post Processing tool for the F280 Series® that allows previously collected data to be Repaired, Enhanced or Reprocessed to improve the quality, accuracy and repeatability of all survey outputs and deliverables.

- **PROCESS -** Real-Time GNSS and Correction outages are common in challenging environments, F280 Series® Motion INSight allows reprocessing of the data in forward and reversion directions to improve data smoothing and/or drop-outs.
- **ENHANCE -** Applying industry standard RTK corrections from base stations to the GNSS data, even if the data was originally collected with no GNSS Corrections (Standalone), correction enhancement will improve the positional accuracy (up to 1cm) and provide robust and optimized outputs.
- **REPAIR -** Any parameters including antenna baseline and offsets, or altitude reference (ellipsoid, geoid or custom) can be modified in Motion INSight to improve or correct the originally recorded data using different parameters.





In all scenarios, the corrected GNSS data and any revised parameters are passed through a predication algorithm in conjunction with the original raw inertial data to produce fully optimized outputs in the F280 Series® COMPAC format and user selectable CSV format for use in Coda Octopus and industry standard 3rd party survey processing software.

Some of the benefits provided by *F280 Series® MOTION INSight* are:

Full Compatibility
Compatible with complete range of F280 Series® products (F275, F280®, F285 and F290), including the remote IMU variants

PPK Corrections Supported
Ability to apply Post Processed Kinematic (PPK) base station corrections to your MOTION data to achieve extremely accurate post processed position (up to 1cm), attitude, heading and heave

GNSS Solution Status
GNSS Solution Status output field to indicate the quality of correction achieved (RTK-float, RTK Integer etc.)

Forwards and Reverse Processing
Forward and Reverse processing supported to enhance data smoothing and robustness during period of drop out or challenging environmental conditions

iHeave Support
Full support for reprocessed iHeave (70 second period filtered heave)

Fully Optimized Outputs
Output to COMPAC format and user selectable CSV formats

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Coda Octopus:MOTION
Precision Attitude & Positioning

F280 Series® MOTION INSight

Repair. Enhance. Process

F280 Series® MOTION INSight can be used in many different scenarios to improve the accuracy, repeatability and robustness of the survey position and attitude data. Some examples of use include:

On-Line Standalone GNSS Data Collection

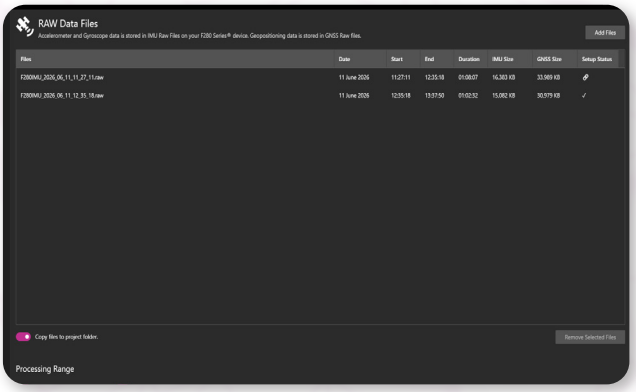
In some scenarios where real-time base station data is unavailable or too costly, the F280 Series® survey data can be processed to add RTK corrections (PPK) from base stations, and significantly improve survey data accuracy

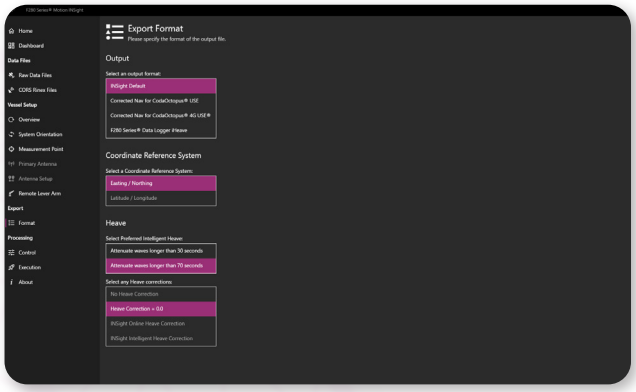
Post Survey Data Analysis and Alternate Data Requirements

Survey data is collected with the optimum settings and reference datums for real-time collection and processing. In some cases, data may be required with different parameters post survey, such as changing the altitude reference model or the sensor and antenna offsets.

Survey GNSS and/or RTK Outages

In many challenging environments such as ports and harbors, inland waterways, and bridges, GNSS and real-time correction data can be degraded and have complete periods of outage. The survey data as a result will be inconsistent and challenging to provide accurate results. F280 Series® MOTION INSight allows repair of these data sets with forwards and backwards processing for positional and attitude smoothing and the ability to replace or augment the recorded intermittent RTK corrections with complete data.





Inputs	F280 Series® (Models F275/F280®/F285/F290) RAW Data Files CORS (Continuously Operating Reference Station) Data for GNSS in Receiver INdependent EXchange (RINEX) Format
Outputs	COMPAC Format - F280 Series® Standard Data Format CSV Format - User selectable for import and processing in Coda Octopus Underwater Survey Explorer, USE PIPE CORE, 4G USE® and industry standard 3rd party survey processing software

Processor	CPU Dual Core 2.5 GHz or equivalent
Memory	4 GB RAM
Operating System	Windows® 11 (64-Bit)
Free Disk Space	200 MB for installation; SSD for faster processing

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