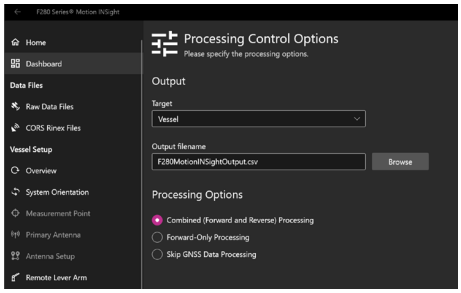
Coda Octopus:MOTION
Precision Attitude & Positioning

/F280 Series® Motion INSight



Benefits

Reduction in Time and Cost of surveys

Increased accuracy and repeatability of all survey outputs and deliverables

Immunity to RTK outages arising from loss of correction signal at time of survey

Achieve Up to 1cm positional accuracy even when no real-time correction available at time of survey

Ability to reprocess and output data with different setup parameters and options such as vertical reference plane

Post Process Kinematic (PPK) processing mode supported

Expert 24x7 Technical Support

REPAIR – ENHANCE – PROCESS

GNSS-Aided Inertial Post-Processing for F280 Series®

Overview

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 re-Processed to improve the quality, accuracy and repeatability of all survey outputs and deliverables.

REPAIR - Real-Time GNSS and Correction outages are common in challenging environments, F280 Series® Motion INSight allows re-processing 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.

PROCESS - 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 an Extended Kalman Filter 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.

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Features

- Compatible with complete range of F280 Series® products (F280®, F285 and F290) including the remote IMU variants
- Intuitive and easy to use software using a project-based approach for data processing
- Ability to process an entire survey data collection or a specific time window of data
- 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
- Forward and Reverse processing supported to enhance data smoothing and robustness during period of drop out or challenging environmental conditions
- F280 Series® setup and output configuration settings can be modified to either correct for poor initial on-line configuration or provide different processing results such as different altitude reference models
- GNSS Solution Status output field to indicate the quality of correction achieved (RTK-float, RTK Integer etc.)
- Full support for reprocessed iHeave (70 second period filtered heave)
- Output to COMPAC format and user selectable CSV format at configurable output rates

Application Scenarios

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.

Survey GNSS and/or RTK Outages - in many challenges 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.

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.

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Inputs

F280 Series® (Models F280®/F285/F290) RAW data files

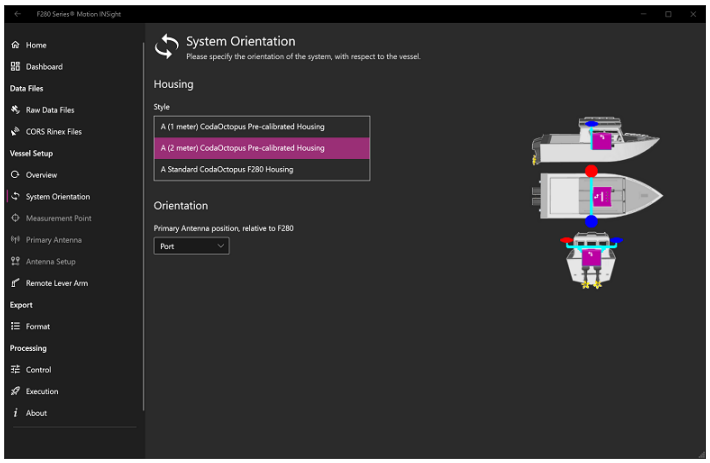
CORS (Continuously Operating Reference Station) data for GNSS in Receiver INdependent EXchange (RINEX) format

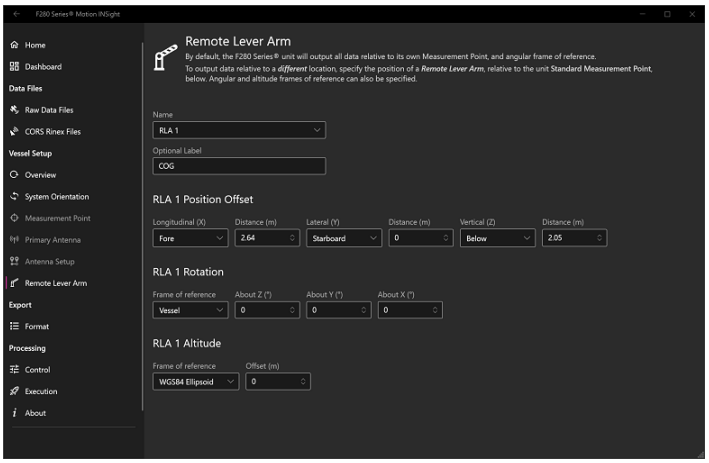
Outputs

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

System Requirements

Component	Minimum	Recommended
Processor	CPU Pentium 3 at 800 MHz or equivalent	CPU Dual Core 2.5 GHz or equivalent
Memory	512MB RAM	4GB RAM
Operating system	Windows® 10 (64-bit)	Windows® 10 Professional (64-bit) or higher
Free Disk Space	200MB for installation	200MB for installation; SSD for faster processing





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