CHCNAV

COPRE
LiDAR PROCESSING SOFTWARE

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MAPPING
& GEOSPATIAL

FLAWLESS DATA PROCESSING FROM FIELD TO OFFICE

CoPre is a powerful software ecosystem developed by CHCNAV that enables users to quickly and efficiently process mobile geospatial mapping data.

CoPre features accurate trajectory processing by a proprietary algorithm, point cloud and image georeferencing, point cloud colorization, filtering, and additional useful functions such as digital ortho model (DOM) generation, leading to the significant improvement of the post-processing accuracy.

CoPre is built around a simple and intuitive user interface. Geospatial professionals can export point clouds and image files without opening third-party software for the positioning and orientation system (POS) computations. It enables the analysis of complex information structures with absolute precision and empowers the world of 3D data processing. CoPre software is the backbone of CHCNAV's LiDARs system series and it's regularly updated with new features, functionality, and tools.

SUPPORT ALL CHCNAV's LiDAR SCANNERS

Instant access to raw data processing
CoPre desktop software provides instant access to raw data from all the CHCNAV LiDARs systems. Whether you want to process data from the compact AlphaAir450 mobile mapper for UAVs, perform massive data processing from the vehicle-mounted Alpha3D, or get the results of your corridor mapping project with the AA1400 or AA2400 on a helicopter, CoPre supports all your mapping scenarios.

COMPREHENSIVE PRE-PROCESSING WORKFLOW

Process trajectory files, LiDAR data and RGB images.
All LiDAR data processing starts with the first and main step of trajectory generation. CoPre is powered by the accurate and efficient algorithm developed by CHCNAV to process captured raw data, including trajectory (POS) files, LiDAR data and RGB images.

Multiple data sets can be processed simultaneously to increase workflow efficiency, solving the problem for SLAM based units of updating a map of an unknown environment while simultaneously keeping track of the location within it.

EXTREME LIDAR DATA QUALITY

Advanced calibration and optimization technology
For the experts searching to optimize their data quality further, CoPre features an advanced processing mode. It handles the layering problems of multiple point clouds and improves the relative accuracy through an efficient strip adjustment algorithm. Additional use of ground control points (GCP) is available to improve the absolute accuracy of the point cloud. The advanced calibration and optimization technology results in a point cloud thickness that is 30% less than similar products provide on the market.

EFFICIENT LASER SCANNER DATA ANALYSIS

Visualization and colorization of mass data
CoPre includes different powerful options to check the data after the processing steps. It supports massive data sets visualization with multiple colorization options. Its automatic trajectory slicing and stratification checking allow quick detection of misalignments across the entire data set. Elevation accuracy can be automatically verified by importing elevation control points. Multiple accuracy reports are available to address quality control requirements.

AUTOMATED PROCESSING & DOM GENERATION

User-friendly data processing
Built on significant expertise in mobile mapping data collection, CHCNAV's solutions are designed to ensure high efficiency in the data processing. CoPre supports automated point cloud processing, image georeferencing, point cloud colorization, depth maps, and results output in a single click.

Users can take full advantage of CHCNAV airborne LiDAR systems for data capture, as CoPre supports rapid DOM generation and analysis without any other software. Furthermore, the DOM generation algorithm in CoPre is a combination of photos and point clouds without a three-dimensional triangulation process.
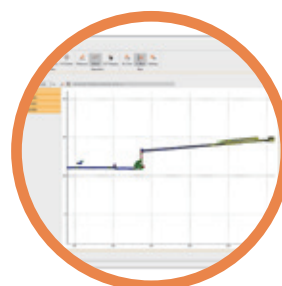
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SENSOR FUSION
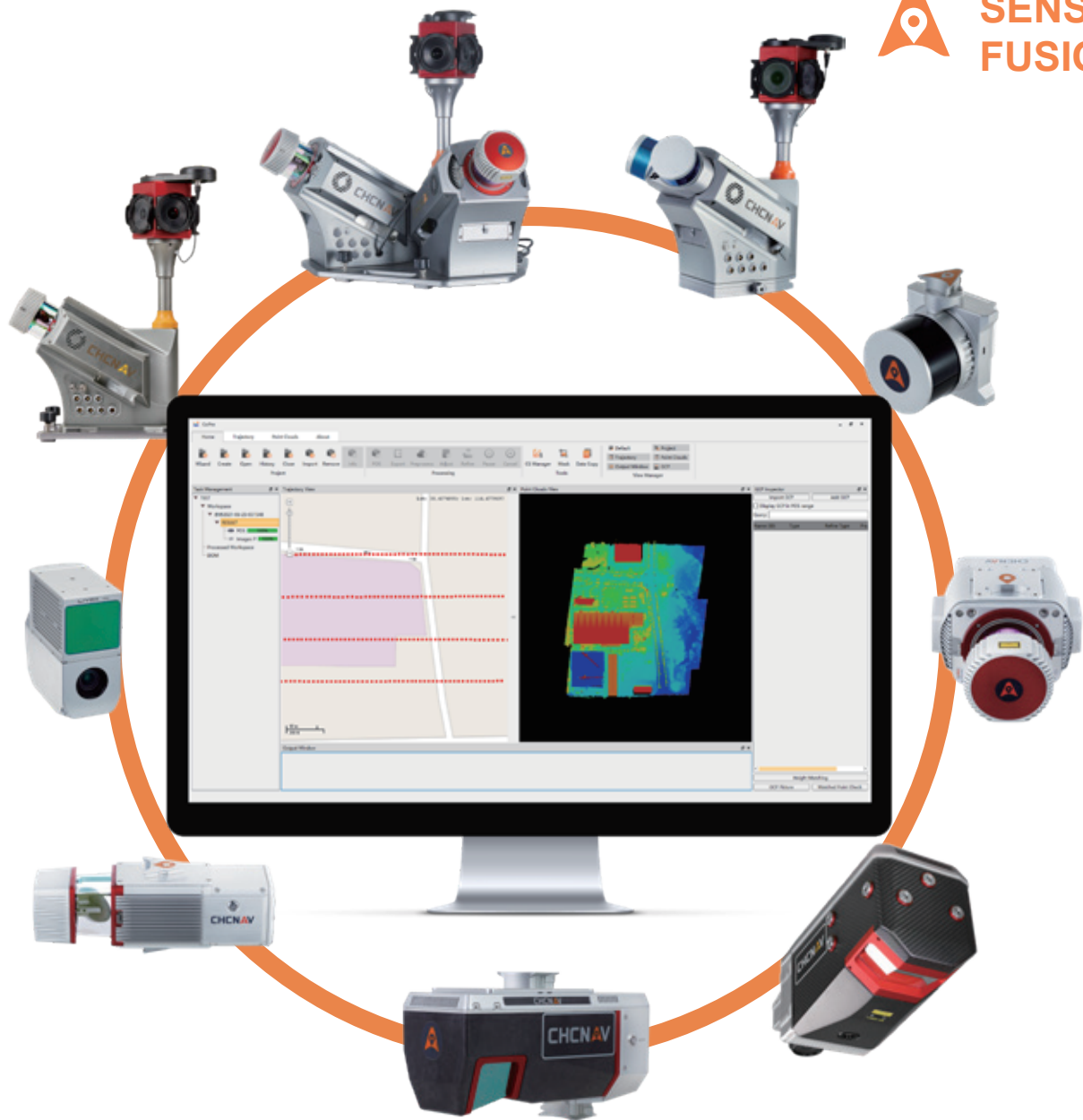
Data Copy Tool

Copying the data is a one-click process. CoPre willread the project structure from the CHCNAV LiDARs data and download them into the selected folder.

CS Manager

A user can select coordinate system from a predefined list of worldwide systems or set it manually by entering the required parameters.

Quality Checks

Additional visualization tools, such as layers and 3D limit boxes, allow users to effectively focus on specific areas of the point cloud data.

Repair POS jump

During data acquisition from vehicles on urban roads, the POS data can be shifted due to prolonged parking, the POS jump function can detect and repair these areas.

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SPECIFICATIONS

System Recommendations	
Operating system	Microsoft Windows 7, 8, 10 (64-bit)
Install package size	Less than 500 MB
File system	NTFS

Hardware	
Processor	Intel® Core™ i7 (Minimum) Intel® Core™ i9 (Recommended)
RAM	8 GB (Minimum) 32 GB or more 64 bit OS (Recommended)
Hard disk	500 GB SSD Drive (Minimum) 1 TB SSD Drive (Recommended)
Large project disk option	RAID 5, 6, or 10 w/ SATA or SAS drives
Graphics card	Nvidia GeForce 1 GB (Minimum) Nvidia GeForce 2 GB+ (Recommended)
Display	1024 × 768 (Minimum) 1920 × 1280 (Recommended)
Input	Keyboard, mouse with wheel

Software License	
License type	Permanent SW registration code Time limited SW registration code USB dongle driver (optional)
SW upgrade	Online version chech Manual install package

Supported Language
English
Russian
Chinese

Software License	
Standard license	POS processing: UAV (airborne); Auto-processing: one-button process point cloud data, picture georeferencing, point cloud colorization, depth map and results output; Pre-processing: supports process point cloud and pictures separately or combined. Generate preview point cloud with distance filter, grayscale filter, noisy point filter and static data filter; Adjust: solve the layering problem of multiple point clouds, improve relative data accuracy; Refine: based on control point characteristics, supports elevation, horizontal, 3D refines, and time/distance refine functions, improve absolute data accuracy; Result export: output adjusted/refined data, include point cloud (e57, LAS, LAZ, PTS, CoData), pictures, colorized point cloud and depth map; Point cloud view: support massive point cloud viewing, rendering, slice and control point selection option; Point cloud colorization: color by height, RGB, intensity, single color; Slicing: automatically slice on the trajectory and check the stratification
Vehicle POS license	In adition to Standard CoPre module; POS processing: trajectory processing of vehicle-mounted setup; Multiple sets of data can be processed simultaneously; Repair POS jump: POS jump function can detect and repair area where POS accuracy was decreased
DOM creation license	Support quick DOM generation and browsing

* Specifications are subject to change without notice.

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