

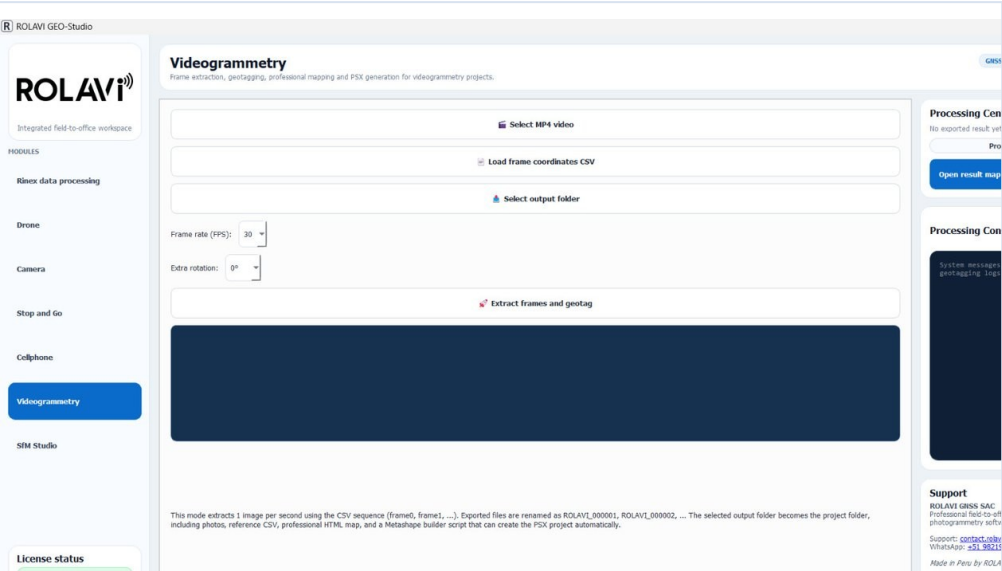
Product purpose / Propósito del producto

English

- ROLAVI GEOSTudio is a professional field-to-office desktop suite for GNSS, PPK, photogrammetry, videogrammetry and georeferenced 3D deliverables.
- It standardizes data preparation, geotagging, QA, mapping and export so that GNSS receivers, cameras, drones, mobile devices and 3D models can be delivered in one workflow.

Español

- ROLAVI GEOSTudio es una suite profesional de escritorio para flujo campo-gabinete en GNSS, PPK, fotogrametría, videogrametría y entregables 3D georreferenciados.
- Estandariza preparación de datos, geoetiquetado, control de calidad, mapas y exportación para integrar receptores GNSS, cámaras, drones, celulares y modelos 3D en un solo flujo.



ROLAVI GEOSTudio main workspace - GNSS / PPK / Metashape-ready suite

GNSS + PPK

RINEX conversion, static/PPK processing and POS QA.

Photogrammetry

Drone, camera and cellphone geotagging workflows.

Videogrammetry

MP4 frame extraction, geotagging and map generation.

Georeferenced 3D

ROLAVIAR/USDZ/OBJ import, GCP adjustment and mesh/cloud export.

Target users / Usuarios objetivo

- Surveyors, geodesists, drone mapping teams, terrestrial photogrammetry teams, GIS technicians and AR/3D visualization teams.
- Topógrafos, geodestas, equipos de cartografía con drone, fotogrametría terrestre, técnicos GIS y equipos de visualización AR/3D.

Functional modules / Módulos funcionales			
Module	English specification	Especificación en español	Main outputs
RINEX / GNSS	Converts native GNSS files to RINEX and runs static or PPK processing with professional controls for frequencies, constellations, ephemeris, base coordinates and antenna setup.	Convierte archivos GNSS nativos a RINEX y ejecuta procesamiento estático o PPK con controles profesionales de frecuencias, constelaciones, efemérides, coordenadas de base y antenas.	RINEX, POS, PDF report, plots
Drone	Geotags drone photographs using POS and MRK/event data, writes GPS EXIF metadata and prepares mapping deliverables.	Geoetiqueta fotografías de drone usando POS y MRK/eventos, escribe metadatos GPS EXIF y prepara entregables cartográficos.	JPG EXIF, CSV, HTML map, PSX
Camera / Cellphone	Processes terrestrial or cellphone images with POS-based matching, GPST/time correction and Metashape-ready references.	Procesa imágenes terrestres o de celular con emparejamiento basado en POS, corrección GPST/horaria y referencias listas para Metashape.	JPG EXIF, CSV, HTML map, PSX/script
Stop and Go	Matches SWMaps or ROLAVICam field CSV timestamps against GNSS POS solutions and exports WGS84/UTM coordinates.	Empareja tiempos de CSV de campo SWMaps o ROLAVICam contra soluciones POS GNSS y exporta coordenadas WGS84/UTM.	Matched CSV, UTM, HTML map
Videogrammetry	Extracts one geotagged frame per second from MP4 video, supports FPS selection and optional 180-degree rotation.	Extrae un frame geoetiquetado por segundo desde video MP4, con selección de FPS y rotación opcional de 180 grados.	Frames, EXIF, CSV, map, PSX
GEOSTudio / SfM	Imports ROLAVIAR, USDZ or OBJ, assigns GCPs, solves georeference adjustment and exports textured meshes and sampled point clouds.	Importa ROLAVIAR, USDZ u OBJ, asigna GCPs, resuelve el ajuste georreferenciado y exporta mallas texturizadas y nubes de puntos.	OBJ, GLB, USDZ, STL, PLY, LAS, LAZ, ROLAVIAR
Operational logic / Lógica operativa - Each module keeps a processing console, progress status, exported-result tracking and professional map/report outputs where applicable. - Cada módulo conserva consola de procesamiento, estado de avance, seguimiento de resultados exportados y salidas profesionales de mapa/reporte cuando aplica.			

Supported data chain / Cadena de datos soportada

Accepted inputs / Entradas

- GNSS raw: UBX, LOG, BIN, RTCM and RTKLIB-compatible raw data.
- RINEX: OBS, NAV, GNAV, HNAV, QNAV, CRX/RNX.
- Imagery: JPG/JPEG photo sets and MP4 video.
- Survey data: POS, POS_EVENTS, MRK, SWMaps CSV, ROLAVICam CSV, GCP CSV.
- 3D/GIS: ROLAVIAR, USDZ, OBJ, GeoJSON, KML, KMZ, CSV lat/lon and zipped Shapefile.

Generated outputs / Salidas

- RINEX observations and navigation outputs.
- RTKLIB POS solution files and professional PDF reports.
- Geotagged photos/frames with GPS EXIF metadata.
- Professional HTML maps with basemaps, legends, coordinate tools and local vector loading.
- Metashape-ready CSV, launcher scripts and PSX projects.
- Georeferenced mesh and cloud exports: OBJ/MTL/textures, GLB, USDZ, STL, PLY, LAS and LAZ.

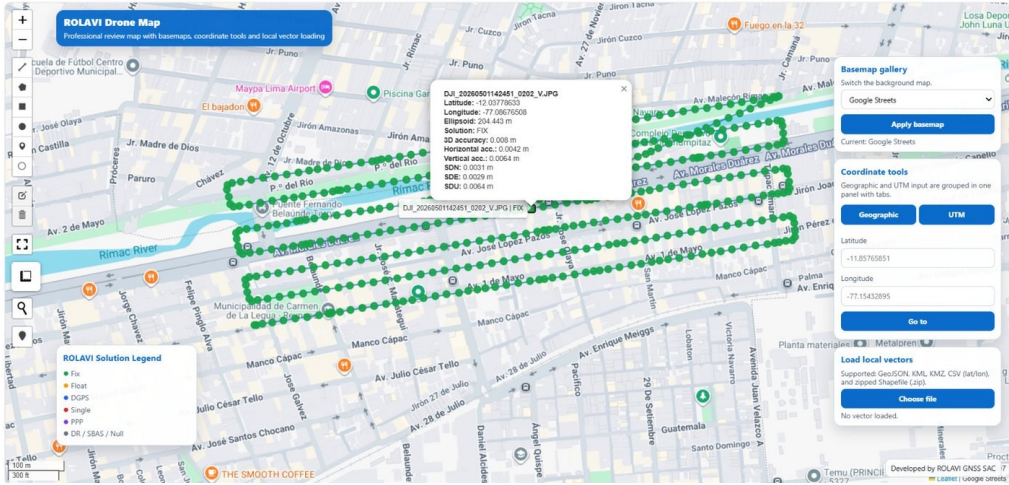
Recommended workflow / Flujo recomendado

- 1. Convert receiver raw data to RINEX when needed.
- 2. Process static/PPK solution and review POS quality, DOP, SVs and signals.
- 3. Use POS/MRK/CSV to geotag drone, camera, cellphone, Stop and Go or videogrammetry data.
- 4. Review the HTML map and export Metashape-ready references.
- 5. In GEOSTudio/Sfm, import the 3D model, solve GCP or manual anchor, then export CRS-controlled mesh/cloud deliverables.

Map deliverables / Entregables cartográficos



Videogrammetry map with solution legend, basemap selector, coordinate tools and local vector loader.



Drone geotagging map with photo popups, accuracy metadata and professional review controls.

Quality control area

Solution classes / Clases de solución

Accuracy metadata / Metadatos de precisión

Map review / Revisión cartográfica

3D QA / Control 3D

Specification / Especificación

FIX, FLOAT, DGPS/DGNSS, SINGLE, PPP, SBAS, DR and Null/empty states with mapped colors.

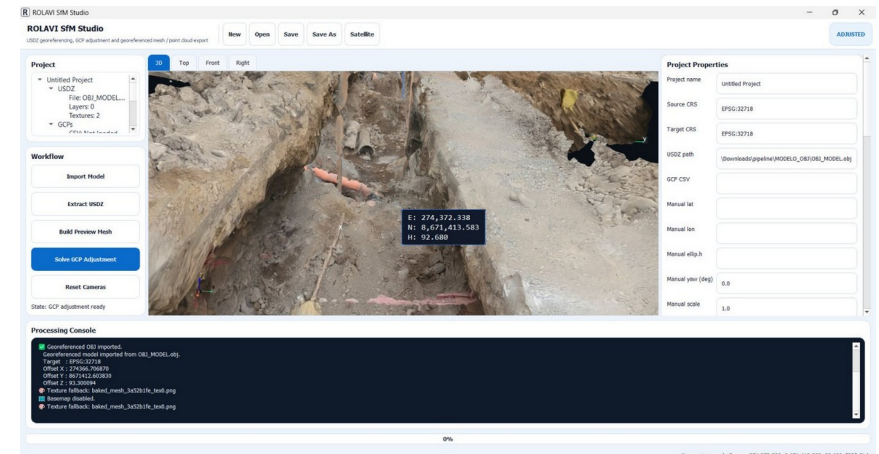
Horizontal, vertical and 3D accuracy; SDN, SDE, SDU; satellites, HDOP/VDOP/PDOP and ratio where available.

Google Satellite/Streets, OpenStreetMap, Esri imagery and Carto basemaps; draw tools, scale, full screen and popups.

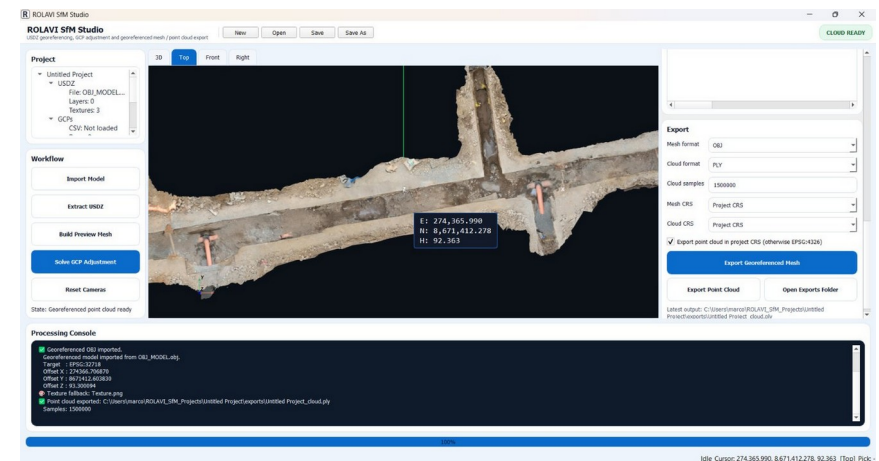
3D, Top, Front and Right views; cursor coordinates; GCP pick assignment; RMSE and residual review.

GEOStudio / SfM technical scope

- Imports ROLAVIAR, USDZ and OBJ models for georeferencing and 3D/2D preview.
- Uses GCPs or manual anchor values: latitude, longitude, ellipsoid height, yaw and scale.
- Supports CRS-controlled export: project CRS or EPSG:4326, with ellipsoid/orthometric height fields.
- Provides 3D, Top, Front and Right views with cursor coordinates and GCP pick assignment.
- Exports textured meshes as OBJ, GLB, USDZ/STL and sampled point clouds as PLY, LAS or LAZ. USDZ export can create a ROLAVIAR package for ROLAVIScan AR.



3D textured model review with projected coordinates.



Top view and georeferenced point cloud export.

System / Sistema

- Windows 10/11 x64 recommended.
- Installer architecture: x64, built with PyInstaller and Inno Setup.
- Development baseline: Python 3.11/3.12 64-bit.

External tools / Herramientas externas

- Blender is required for USDZ, GLB, STL and ROLAVIAR export workflows.
- Agisoft Metashape is optional for automatic PSX creation.
- Bundled engines include RTKLIB convbin, rxn2rtkp and rtkplot.

Support / Soporte

- Publisher: ROLAVI GNSS SAC.
- Support: contact.rolavi@rolavisurveyor.com | +51 982190159.
- Made in Peru by ROLAVI GNSS SAC.

Document scope: compact technical specifications and quick manual summary. Use it as the base for a full step-by-step user manual.