CUBE-A

ANDROID FIELD SOFTWARE

STONEX

stonex.it

Stonex Cube-a is an advanced, all-in-one software solution specifically designed for surveying, geospatial, and construction professionals. Built for the Android platform and optimized for 64-bit architecture, Cube-a delivers a smooth, user-friendly experience that simplifies data collection, processing, and management, empowering surveyors to boost both productivity and accuracy in the field.

Seamlessly integrating with Stonex hardware, including GNSS receivers and total stations, as well as third-party devices, Cube-a offers a modular approach that allows users to activate essential features such as GNSS data management, robotic and mechanical total station support, GIS functionality, and 3D modeling capabilities. This flexibility ensures the software can be tailored to meet the unique needs of each user.

With support for touch gestures, Cube-a works effortlessly on smartphones and tablets, making it an ideal companion for fieldwork. Additionally, its multi-language support enhances its versatility, making it a powerful tool for a wide range of surveying and geospatial applications worldwide.

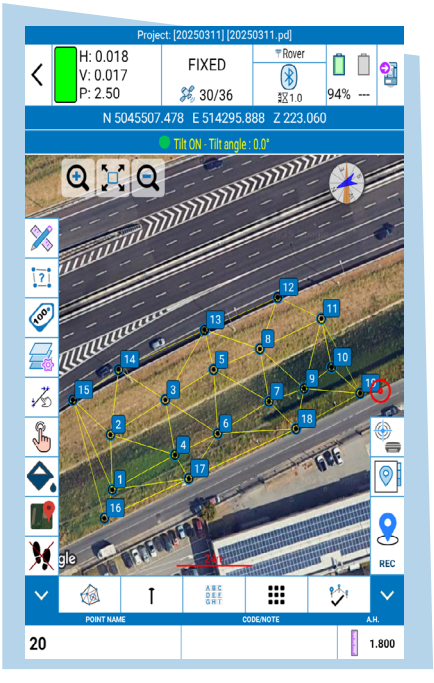
MAIN MODULES

Cube-a offers modular flexibility, enabling each of the main modules to be used individually or combined for mixed surveying, allowing users to seamlessly integrate different surveying techniques and maximize functionality based on their specific needs.

GPS Module

Cube-a is fully compatible with all Stonex GNSS receivers, providing seamless integration and quick pairing via RFID/NFC Bluetooth tags and QR codes. Supporting a range of modes, including Rover, Rover Stop&Go, Base, and Static, Cube-a offers the flexibility needed for various surveying applications.

The software features multiple screens that provide essential real-time information on the GNSS receiver's status. Users can easily monitor key data such as position, Sky Plot, SNR levels, and the base position, ensuring a smooth and efficient surveying experience.



TS Module

Cube-a supports both mechanical and robotic Stonex Total Stations, enabling seamless wireless connections via Bluetooth and Long-Range Bluetooth. For robotic stations, it offers prism tracking and search capabilities.
This module includes features like compensator interface, station on point, and free station/ least squares resection for precise setup and positioning. Additionally, the F1 + F2 automatic measure modes simplify measurements for both mechanical and robotic Total Stations, streamlining your workflow and improving accuracy.

Seamless Integration Between Total Station and GNSS Receiver

Cube-a seamlessly integrates Total Station and GNSS technologies, allowing surveyors to switch between them with a tap. This flexibility ensures the best measurement method for any scenario, making Cube-a ideal for various surveying tasks. It streamlines data exchange between the controller and Total Station, enabling field data acquisition, transfer, and copy without returning to the office.

ADD-ON MODULES

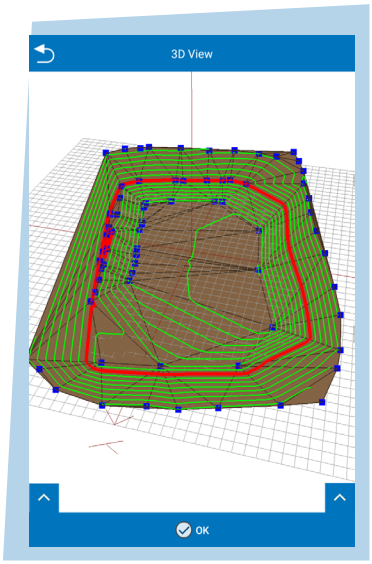
Cube-a provides the flexibility to extend the functionality of the main module, allowing for customization based on specific needs. These add-on modules can be seamlessly integrated with either the GPS or TS main modules, enhancing the system's performance and versatility.

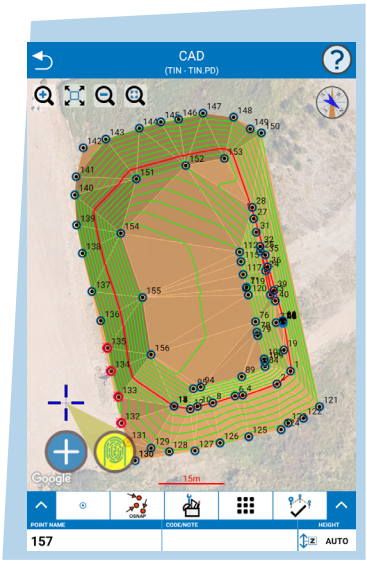
GIS Module

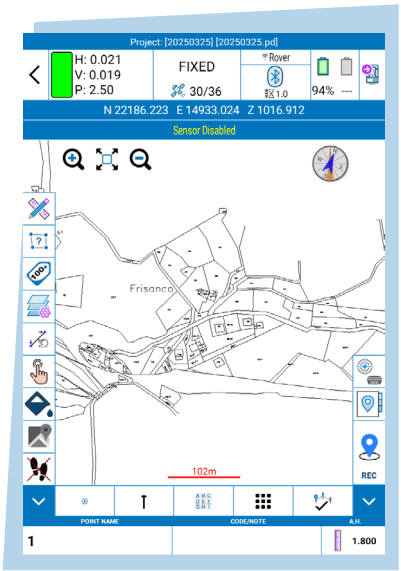
The Cube-a GIS Module is a powerful tool for capturing, analyzing, and managing spatial and geographic data within surveying workflows. It fully supports SHP format with all attributes, enables database management created by third-party software, and field editing of database fields, photo association, and creation of custom tabs. Ideal for industries such as urban planning, environmental management, and transportation, Cube-a enhances GPS workflows by automatically drawing vectors and allowing users to customize data forms through the Feature Set Designer. Cube-a supports shapefile, KML, and KMZ imports/exports, ensuring compatibility with a range of GIS software for easy data sharing. It also features a Utility Locator for mapping underground utilities with customizable attributes. The software prompts GIS data entry during point or vector acquisition and offers WMS layer visualization to streamline field operations and improve workflow efficiency.

3D Module

The Cube-a 3D Module enhances real-time surface modeling and road design by seamlessly integrating with DWG files for smooth compatibility with standard CAD drawings. It also supports point cloud data, enabling users to create accurate 3D models, making it ideal for surveying and construction projects. The module includes advanced volume calculation tools for efficient earthwork and material quantification, supporting precise project estimation and resource management. Additionally, it simplifies the stakeout of centerlines and road alignments, ensuring accurate positioning according to design specifications. The module supports LandXML for importing and defining road elements and allows field editing. Customizable staking methods offer flexibility for precise elevation and station point measurements, making it adaptable to various project requirements.







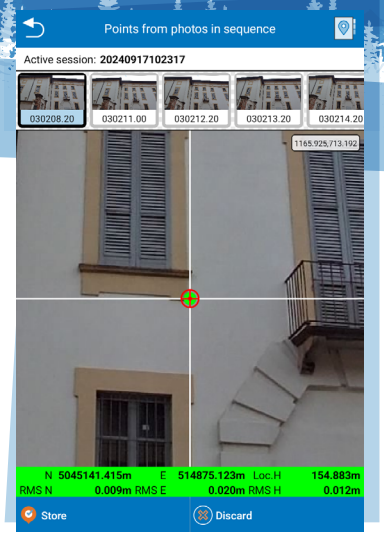
MAIN FUNCIONALITIES

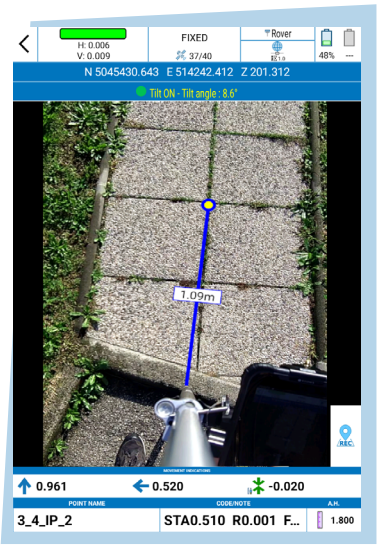
Native DWG and DXF format support

Cube-a transforms design and surveying workflows with enhanced CAD file interoperability and an intuitive interface. Supporting DWG and DXF formats, it ensures seamless integration with other CAD tools. Its powerful 2D and 3D rendering engine enables fast, detailed visualization, allowing real-time adjustments in both views. Tailored for surveyors, Cube-a features a touch-optimized interface, smart pointer tool, and intuitive object-snaps for easy field data integration. Streamlined stakeout commands provide both graphical and analytical indicators for accurate, efficient targeting.

Photogrammetry and AR

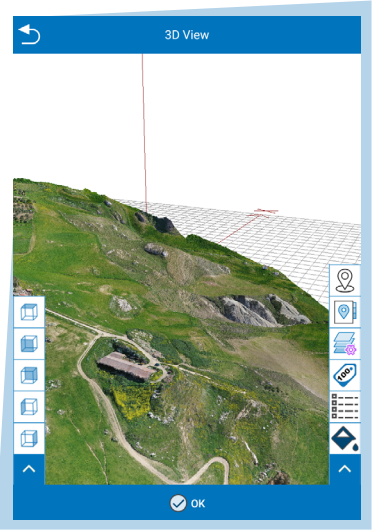
Within Cube-a, the functionalities of the GNSS receivers with cameras can be used. Cube-a simplifies point staking using the cameras of the receiver, the frontal camera which clearly displays the surrounding area to help surveyors accurately identify the point of interest. As the operator approaches, the system automatically switches to the lower camera of the receiver for precise framing, ensuring reliable measurements.
Cube-a's interface uses visual aids to guide surveyors to the exact staking location, with a graphical display that indicates both the direction and distance to the point, adjusting as the operator gets closer. For measuring inaccessible points, Cube-a allows you to record a video of the area you want to measure. The system then extracts several photos that help align the points to be measured, providing calculated coordinates that can be easily recorded. This functionality also works offline, ensuring flexibility in various environments.





Point Cloud and Mesh

Supporting LAS/LAZ, RCS/RCP point clouds, OBJ mesh files, and XYZ files, Cube-a enables precise 3D visualizations from scanned data, efficiently handling large-scale datasets while ensuring near-real-time rendering of point clouds and meshes, providing high levels of detail and accuracy.
Cube-a offers powerful tools for real-time surface modeling, including perimeter selection, break-lines, and volume calculations. Users can choose from multiple display modes, such as wireframe and shaded triangles, and seamlessly export surface data in various formats for further analysis.
In addition to 3D modeling and point cloud integration, Cube-a supports industry-standard DWG files, allowing for easy import, export, and collaboration across different CAD platforms. This ensures smooth integration into existing workflows and enhances project efficiency.
Cube-a's volume calculation tools allow users to define and compute volumes, as well as perform cut-and-fill operations or material quantification. This functionality is invaluable for tasks such as earthworks, mining, and construction, where accurate volume measurements are crucial for cost estimation and resource management.



TECHNICAL FEATURES

	GPS	GIS[1]	TS	3D[2]
PROJECT MANAGEMENT				
Job management	✓		✓	
Survey Point Library	✓		✓	
Editable Fieldbook	✓		✓	
System settings (units, precision, parameters, etc.)	✓		✓	
Import/export tabular data (CSV/XLSX/other formats)	✓		✓	
Import/export ESRI shapefiles (with attributes)		✓		
Export Google Earth KMZ (KML) with photos/Send to Google Earth	✓			
Import KMZ (KML files)	✓			
Import Raster Image	✓		✓	
External Drawings (DXF/DWG/SHP)	✓		✓	
External Drawings (LAS/LAZ/XYZ/OBJ/PLY)				✓
Import LAS/LAZ, AutoDesk® ReCap® RCS/RCP, XYX external point cloud files				✓
Import OBJ external mesh files				✓
Graphical Preview RCS/RCP point clouds, OBJ mesh files				✓
Share files by cloud services, e-mail, Bluetooth, Wi-Fi	✓		✓	
Customizable ref. systems also by remote RTCM messages	✓			
Features codes (multiple feature tables)	✓		✓	
Fast Coding Panel	✓		✓	
GIS support with customizable attributes		✓		
WMS support		✓		
All brand bluetooth disto support	✓		✓	
GNSS MANAGEMENT				
Support for Stonex receivers	✓			
Generic NMEA (support for third party receivers) - Rover only	✓			
Receiver status (quality, position, sky view, satellites list, base info)	✓			
Full support for features like E-Bubble, Tilt, Atlas, SureFix	✓			
Network connections management	✓			
Support of RTCM 2.x, RTCM 3.x, CMR, CMR+	✓			
Automatic GNSS model & features detection	✓			
Automatic antenna offset management	✓			
Bluetooth and Wi-Fi GNSS connection	✓			
TS MANAGEMENT				
TS Bluetooth			✓	
TS Long Range Bluetooth			✓	
Search and prism tracking (Robotic only)			✓	
Compensator interface			✓	
Station on point			✓	
Free station / Least squares resection			✓	
TS orientation st.dev. and check orientation			✓	
Topographic basic calculation			✓	
Rotate to GPS position[3]			✓	
Rotate to given point			✓	
Export TS raw data			✓	
Export mixed GPS+TS raw data	✓		✓	
Grid Scan[5]			✓	
F1 + F2 automatic measure			✓	

	GPS	GIS[1]	TS	3D[2]
SURVEY MANAGEMENT				
Localization by one and multiple points	✓		✓	
GPS to grid and vice versa	✓			
Cartographic predefined reference systems	✓		✓	
National grids and geoids	✓			
Integrated CAD with object snapping and COGO functions	✓		✓	
Layers management	✓		✓	
Custom Point Symbols and Symbol Library	✓		✓	
Entity acquisition management	✓		✓	
Point Survey	✓		✓	
Hidden points calculation	✓		✓	
Automatic point collection	✓		✓	
Acquire points from photos in sequence (* some GNSS models only)	✓			
RAW data recording for Static and Kinematic post-processing	✓			
Point stakeout	✓		✓	
Line stakeout	✓		✓	
Height Stakeout (TIN or inclined plane)	✓		✓	
Visual Stakeout (* some GNSS models only)	✓			
Stakeout and reports	✓		✓	
Mixed Surveys[3]	✓		✓	
Measures (area, 3D distance,etc)	✓		✓	
Display functions (zoom, pan,etc)	✓		✓	
Surveying tools (quality, battery and solution indicators)	✓			
Visualization of the drawing on Google Maps/BingMaps/OSM	✓		✓	
Adjust background map transparency	✓		✓	
Map rotation	✓		✓	
Tilt/IMU Sensor Calibration	✓			
Info commands	✓		✓	
Corner Point	✓			
Collect a point by 3 positions	✓		✓	
Record Settings	✓			
COGO	✓		✓	
Freehand sketch + picture of collected points	✓		✓	
Pregeo (Italian Cadastral data)	✓		✓	
Dynamic 3D models (TIN)				✓
Constraints (perimeters, break-lines, holes)				✓
Earthworks calculations (volumes)				✓
Contourlines creation				✓
Calculation of Volumes (TIN vs inclined plane, TIN vs TIN volume computation, etc.)				✓
Calculation reports				✓
Real-time calculation of contour lines/isolines	✓		✓	
Road stakeout				✓
Raster georeferencing	✓		✓	
Adjust raster images opacity	✓		✓	
Connect to Utility Locators		✓		
LandXML export/import				✓
GENERAL				
Automatic SW updates[4]	✓		✓	
Direct technical support	✓		✓	
Multi-language	✓		✓	

1. GIS available only if GPS module enabled
2. 3D available only if GPS and/or TS module enabled
3. Available only if GPS and TS modules enabled
4. Internet connection required. Additional charges could apply.
5. Grid Scan available with Stonex R180 Robotic Total Station

Illustrations, descriptions and technical specifications are not binding and may change

Viale dell'Industria 53
20037 Paderno Dugnano (MI) – Italy
+39 02 78619201 | info@stonex.it
stonex.it

STONEX AUTHORIZED DEALER