MAb FieldCore user manual

A practical guide for iPhone and iPad

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Prepare projects, collect field data, check results and share your work.

Maps and layers, 3D buildings and GPS, facade photographs, CAD and GIS delivery, waypoints and sensors, .smab sessions, LAS-tags, indoor paths, LiDAR, RoomPlan and CarPlay.

How to use this guide. Start with the guided project, then use the chapter for your activity. Numbered steps describe actions; checking sections explain how to assess results and understand limitations.

Reference screenshots are collected in the appendix and retain their original Italian interface. Instructions use English command descriptions; wording, availability and position depend on version, device and plan.

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Your first guided project

MAb FieldCore brings together maps, field data, photographs, documents, remote sensor readings and three-dimensional surveys. A project holds your work; layers separate different kinds of information. A waypoint is a map point with a record and optional attachments.

Use this exercise before working with real data. Available functions depend on the device, plan and installed version. To find a command missing from a toolbar, open **Tools** → **All commands**.

Try the complete workflow

1. In the library, choose **+** → **New project** and name it “Manual test”. Use your current location only if you want to start nearby.
2. Open the project and move the map to a recognisable place. Changing the view does not change saved coordinates.
3. Open **Add** and place a waypoint at the map centre. Choose **Create new layer** and enter “Site visits”.
4. Name the point “Point 01”, complete its fields and save. Check that it belongs to the intended layer.
5. Tap the point to open its details. Add a photograph or document, then reopen the attachment to check the link.
6. Open **Layers**, change the layer colour or symbol and return to the map. Try switching between individual waypoints and clusters.
7. Open **Export project**, create an exchange file and save it in Files. Also create a project backup: a map export does not replace a backup.

Check the result

Close and reopen the project. The point, layer, attributes and attachments should remain available. Test restoration with a separate demonstration project; keep your working original.

This manual follows the working sequence from preparation to mapping, capture, sharing and support. The sensor, LiDAR and CarPlay chapters also explain limitations that affect results.

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01 Requirements and permissions

Mapping works on iPhone and iPad models compatible with the app version. LiDAR scanning requires a device with a LiDAR sensor; RoomPlan also requires operating system support. Installing the app on a device without LiDAR does not enable scanning.

Prepare the device

1. Check compatibility and updates on the App Store listing.
2. Check free storage and battery charge. Clouds, photographs and packages can require much more space than map data alone.
3. Open **About** in app settings and note the version and build for support requests.
4. Before fieldwork, open your project, download the required data and test the functions you intend to use offline.

What permissions allow

Permission	Used for	If access is denied
Precise location	GPS, tracks, current position and navigation	Existing data remain usable, but a precise fix is unavailable
Camera	Photographs, LiDAR, RoomPlan and visual references	Camera-based capture cannot start
Photos and files	Selecting or saving media and documents	Only sources and destinations permitted by iOS can be used
Microphone	Functions that record sound	Audio recording is unavailable
Local network	Services and sharing on your Wi-Fi	The local server or display may be unreachable

Permissions are requested when needed. If a function is blocked, check the app’s iOS settings; control locations vary by system version. The photo picker may grant access only to selected items.

Understand the limits

Reported GPS accuracy is an estimate. Photos, point clouds and models do not replace certified measurements or professional verification. Follow thermal, memory and tracking warnings; save your work and resume in suitable conditions. Configure driving functions only while parked.

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02 Projects and data protection

The library lists local projects. Each project organises geometries, attributes and references to its content. An account or subscription does not automatically synchronise or back up every project.

Create and reopen a project

1. In the library, tap **+** → **New project**.
2. Enter a recognisable name, preferably including the place and activity. The working map uses WGS84; imports must correctly interpret the source coordinate system.
3. Choose whether to acquire an initial location. If no fix is available, centre the map later.
4. Confirm with **Create** and open the project from the library.
5. Check the map title before adding data so that you work in the correct project.

The project actions menu provides available operations such as opening, sharing, backup and deletion. To recover a received project, use the library import command with the package format expected by the app.

Private projects and encrypted packages

Use project security controls to protect access and the dedicated command to create an encrypted package. These are separate operations: an app access PIN does not mean every exported file is encrypted.

Keep the package password safely, separately from the file. Follow the displayed minimum password requirement. An encrypted archive without its correct password cannot be recovered through an ordinary account reset.

Before deleting or transferring

- Export a complete copy and test it in a separate project.
- Avoid references to temporary files or content available only on another device.
- Keep survey and import originals until the result has been checked.
- Remember that service credentials and local sensor history do not travel with the project.

Deleting a project removes associated local data, including its sensor history. Signing out and deleting a project are different operations.

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03 Maps search and commands

The map combines a basemap with project data. When a project opens, the app attempts to frame the area containing its information. Use search and centring for work spread across several places. Toolbars collect frequent actions and can be customised. Command names are more reliable references than screen positions.

Orient the map and find your data

1. Drag to pan; pinch or use **+** and **−** to zoom.
2. Use the data extent command to frame loaded elements. This does not centre the GPS position.
3. Use **Centre on GPS** once, or enable **Follow GPS position** to keep the view on your moving location.
4. Restore north-up for a stable map view; choose travel direction when following a route.
5. Open the legend to interpret visible layer symbols, colours and categories.

Search for places and features

Place search. Find addresses and localities through the mapping service. Internet and provider coverage may be required. Check municipality and country when names are ambiguous.

Feature search. Search project data and open the matching record. Layer filters help in projects with many points.

Coordinate inspection. Read a map position. Displaying coordinates does not save a waypoint; use the insertion command to retain it.

If a feature is missing

Check layer visibility, filters, scale, symbols and opacity. Tap a cluster or zoom in to separate nearby points. Labels may be reduced for readability without deleting data.

If the GPS cursor leaves the screen, check manual panning and follow status. A visible cursor does not imply that track recording is active.

For less frequent tools, open **Tools → All commands**. Its search finds app functions rather than places or waypoints. The following pages explain command search and map shortcuts.

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03 Navigate Apple maps and 3D buildings

The basemap provides the background; project layers hold your data. The dedicated **3D buildings** map displays acquired and saved volumes. Switching representations does not move project coordinates.

Search and initial framing

1. Use **Search place** for an address, locality or coordinates. Include city and country to distinguish similar names worldwide.
2. Check the result and preview before centring the map. Place search does not automatically download buildings.
3. On reopening a project, check the area containing its data. Features in distant locations can produce a very broad overall view.
4. Use feature search or centring controls to return to a particular object. Framing changes the view rather than the geometry.

Gestures and basemaps

Drag to pan and use two fingers to zoom and rotate. **2D/3D** changes the map view on supported Apple basemaps. The app applies compatible Satellite mode automatically; there is no switch to enable in the basemap panel.

The Apple view and downloaded volumes are separate resources. Choose **3D buildings** among the maps, or open its command, to use acquired buildings. Building layer footprints remain available on other basemaps.

If a gesture does not respond

Close panels covering the map and check that navigation mode is active. Finish drawing or moving a feature before trying again. Suspend **Follow** if GPS keeps returning the view to your position. With large projects, allow content updates to finish and check for duplicate visible layers of the same area.

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03 Find commands by activity

All commands organises functions into eight collapsible groups. Groups start closed, so you can open the one you need without scrolling through every action.

Group	Main activities
Map and search	Map view, places, features and legend
Waypoints drawing and measurements	Insertion, geometries and measurements
GPS and tracks	Position, follow, cursor and recording
LiDAR and content	Capture, archive and project content
Data import	Files, folders and mapping formats
Local and offline data	Downloads and offline archives
Export and share	Deliverables and sharing
Navigation and settings	Navigation and working preferences

Search without knowing the group

1. Open **Tools** → **All commands**.
2. Enter a term such as “raster”. Search considers command and group names in the app language.
3. Read the results; matching groups expand automatically. Case and accents need not match exactly.
4. Tap a command briefly to run it. Clear the search to restore previously open groups.

When you enter several words, all must occur in the searched text. No results does not mean project data are missing: this search finds functions.

Unavailable means a working requirement is missing. For example, pausing requires an active recording. A listed command still requires the relevant hardware, permission and plan.

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03 Add shortcuts to the map

Place frequently used actions on map toolbars. Customisation applies to maps in all projects on this installation, rather than only to the open project.

Add without running

1. Open **All commands** and find the action by group or search.
2. Press the command name for **at least three seconds** without dragging. A long press adds a shortcut without running the action.
3. Alternatively, tap its **empty pin**. A filled pin means the shortcut is already on the map.
4. Close the panel. The shortcut appears at the beginning of the toolbar associated with that action type.
5. Tap the map shortcut to use the function. Adding the same command again creates no duplicate.

A short tap on the name runs the command immediately. Scrolling adds no shortcuts. VoiceOver provides a dedicated action for adding or removing map shortcuts.

Reorder and remove

To remove a shortcut, return to the catalogue and tap its **filled pin**. The function remains available and project data are retained.

Open **Settings** → **Map commands** to manage button order, content and size. Choose drawing and measurements, the main toolbar, or map and GPS; use the move and removal controls. Actions have an assigned toolbar and cannot be dragged freely to any bar.

Resetting toolbars restores the initial configuration and removes customisation. Check the result before resuming work.

Shortcuts and visibility

Long-pressing a catalogue entry adds a command. Long-pressing a map toolbar changes whether it stays visible or fades. You can also choose **Always visible** in **Map commands**. Closing the catalogue shows the toolbars, then your visibility preference applies.

GPS shortcut names change with state, such as pause or resume. A shortcut does not enable a paid function or supply missing hardware.

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04 Layers symbols and labels

Layers separates vector data, rasters and access to online maps and services. Use distinct layers for different information, such as site visits, utilities and routes.

Manage a layer

1. Open **Layers** and identify the level by name and geometry type.
2. Hide it with the visibility switch without deleting it.
3. Open **Appearance and tools** for supported symbols, colours, sizes, opacity and labels.
4. Open **Layer actions** for management. Check which features belong to the layer before deleting it.
5. Return to the map and inspect both close and wider views.

Categories and presets

Choose an attribute and palette to colour data by category. Equivalent categories can retain consistent colours across layers using the same palette; manual colours take priority over automatic generation.

A preset stores supported style settings, including category rules. **Apply the preset to the intended layer**: saving it does not assign it to every layer. Check generated colours and empty values for new categories. A symbol preset is different from filling point attributes.

Labels and attachments

Choose displayed fields, adjust their size and appearance, and check the leader to the point. Media previews require valid references and readable formats. A filename or URL displayed as text does not prove that its content was copied into the project.

Individual points or clusters

Use the map toolbar button to switch. Clusters visually group nearby points; they do not merge or delete geometry. Also check layer-specific preferences. In large projects, limit labels and visible layers before increasing rendering quality.

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04 Manage many waypoints and categories

For projects with thousands of features, separate data by activity and limit simultaneous display. A symbol or label absent at the current scale does not mean the feature has been deleted.

Keep browsing responsive

1. In **Layers**, show only levels needed for the current task.
2. Choose clusters or individual points for the scale, then zoom into the area to distinguish neighbours.
3. Use feature search to open a record without locating its symbol visually.
4. Show a few meaningful label fields; open details for complete information and attachments.
5. Finish or cancel current record edits before changing projects.

Collapse the category list

In **Symbology**, choose the category field and wait for values to load. Expand the category list to change colours or visibility, then collapse it to reach other controls. Search finds values without scrolling the entire list.

For buildings, check the selected field and legend: height and height quality describe different things. Acquired building areas in the same project share the style defined for this data family.

Scroll a long record

Drag within the record body to read subsequent fields. Dragging the map moves the geographic view instead. Finish keyboard entry before reaching controls at the bottom. Use the photograph or document close control to return to the record.

When reporting slowdowns, note the approximate feature count, visible layer, basemap and exact action. Keep an anonymised project copy for support.

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05 Waypoints attributes and attachments

A waypoint holds a position and a data record. Create it from GPS or a chosen map location. The waypoint table lets you browse by layer without mixing unrelated categories.

Insert a point in the correct layer

1. Open **Add** and choose the insertion method. For GPS, wait for a recent fix and check accuracy.
2. Check the proposed location; the form is not a continuously following GPS view.
3. Explicitly select the destination layer. To create one, choose **Create new layer** and enter a non-empty, unique name.
4. Complete name, category and attributes. Recheck the category after changing layers because values may differ.
5. Save and check the point in the layer table. Cancelling insertion does not create an empty layer.

The preferred destination is remembered while working on the open map; check it again after changing projects.

Edit and move

Tap a point or table row to open details. Edit permitted fields and save. Where available, use the graphical move action to correct location, check the new position and confirm. Closing the panel alone is not a save.

Photographs documents and links

Add media with the record commands and test opening immediately. Use the cloud viewer link for recognised LiDAR attachments. Keep a survey with its associated files.

Fields containing several web URLs may support commas, semicolons or newlines. Prefer **one URL per line**, especially for complex parameters; do not split a comma belonging to the address. Remote links require network access and permissions. A computer file path is not automatically accessible from an iPhone.

Continue with the following pages to configure sensor readings, history and dashboards.

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05 Configure a remote sensor

The sensor function reads HTTP or HTTPS services and displays values in waypoint details. A network sensor, gateway or authorised platform may provide the service. This is not a universal direct connection to external Bluetooth, USB or LiDAR devices.

Obtain the service details

Ask for the endpoint URL, HTTP method, response type, credentials if required, value names and units. Use a reading endpoint: this module is not an actuator or plant control console.

Configure and test

1. Open waypoint details and choose **Add sensor**.
2. Enter a clear name, enable remote data and set the **Endpoint URL** and required method.
3. Choose **Response type**: Automatic, JSON, XML, CSV or plain text. Automatic recognition still needs checking.
4. Set **Authentication** only if needed: API key in a header or query, Bearer token, or Basic username and password. Use dedicated fields.
5. Tap **Test connection**. Check status, redacted response and available paths. Do not share screenshots containing credentials or confidential data.
6. In **Field mapping**, add a row per value, choosing the extracted path, label and correct unit. Check the **PARSED** values.
7. Set refresh interval, timeout and stale-data threshold. Save, then use **Refresh sensor data** in details.

JSON mapping example

For `{"temperature":21.4,"pressure":2.8}`, map `temperature` to “Temperature”, unit “°C”, and `pressure` to “Pressure” with the provider’s declared unit. For nested objects or lists, select paths actually shown by the test.

JSON, XML, CSV and text have different structures; XML support is not a full XPath engine. Prefer HTTPS. Local HTTP may need local network permission and provides no TLS protection.

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05 Read values history and charts

Remote readings are separate from map attributes: refreshing a sensor does not automatically rewrite waypoint fields. The app retains update state and time so that recent values can be distinguished from the last valid reading.

Updates and thresholds

Request a manual reading or enable automatic refresh. The minimum configurable interval is five seconds; actual timing depends on network, load and app state. Continuous background monitoring is not guaranteed.

Set **Stale after** to suit the service frequency. If the last valid value is retained, a network error may leave its number visible. Check status and time rather than treating it as a new measurement.

Numeric fields can have warning and alarm thresholds. Empty thresholds are inactive; alarms take priority when conditions overlap. These indicators do not replace certified alarm systems.

Browse history

1. Enable **Record numeric history** in sensor configuration.
2. Obtain successful readings and open **History and chart**.
3. Choose the field and period: 1 hour, 6 hours, 24 hours, 7 days or 30 days.
4. Read the curve, minimum, maximum, average and sample count. A blank graph may mean there are no numeric samples in that period.
5. Use **Refresh sensor data** for another measurement. Refreshing the chart rereads history and does not necessarily query the server.

Sample timestamps record reception on the device, which may differ from measurement time. Connection tests, errors and cache reuse create no new history measurements; two successful readings with the same number are two valid samples.

Retention. History is local and excluded from project packages and backups; credentials also stay on the device. Recheck imported configurations and enable them with your own credentials. This is not a central archive, a history export or an always-on monitoring dashboard.

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05 Dashboards and map values

A waypoint can combine several sensors, such as temperature, pressure and flow at one station. Its dashboard gathers available readings, active sensor count and warnings. Sensor names, units and timestamps identify each value.

Prepare a station

1. Create a waypoint in the utility layer with a recognisable name.
2. Add required sensor configurations and run **Test connection** for each. One endpoint may supply several quantities.
3. Define names, units, thresholds and history recording for numeric fields.
4. Save, reopen details and check the dashboard. Refresh a particular sensor to verify a recent reading.
5. Open its history to compare the current value with available samples. Summaries may show only some fields; use full details when needed.

Choose the map display

Open **Dashboard in label**, enable **Show value on map**, then choose **Sensor and parameter** or the first available numeric parameter. Keep title, unit and state readable. The small chart displays up to 24 readings from the visualisation, rather than the complete history. Other quantities remain available in details.

Use sensor symbols to distinguish energy, water and environmental categories. An icon describes content but does not prove that a device is connected. Check that icon, quantity and unit agree.

Current or retained data

Last valid value retained identifies an earlier reading. If a service fails, check URL, network, authentication and date before using the number. Alarm colour does not replace measurement time.

To represent the station in a cloud, create a waypoint-linked LAS-tag as described in chapter 13. Its map position alone does not establish a verified elevation or 3D anchor.

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06 Drawing measurements and geometry editing

Drawing tools create project data; measurement tools read distances and areas. A temporary measurement does not automatically become a saved feature.

Draw lines and polygons

1. Open line or polygon drawing from a toolbar or **All commands**.
2. Choose a useful view before placing vertices.
3. Tap vertices in order. A line needs two points; a polygon needs at least three distinct vertices.
4. Correct the last step with the available undo command. Avoid duplicate points and unintended intersections.
5. Finish, check layer and attributes, then save.
6. Reopen the feature to verify shape, position and data.

Move a feature

Where supported, use graphical movement from the feature record. Check whether you are changing geometry or only style. Confirm the final position and inspect it closely.

Keep imported originals before extensive changes. Manual movement may visually align objects without fixing a coordinate-system error. Correct the import first in that case.

Measure

Open distance measurement and select points along the path. For area, select the boundary. Read the displayed unit: distance may adapt from metres to kilometres with scale. Compare values only after considering units, reference system and geometry quality.

A map measurement does not establish actual sloping ground distance or survey accuracy. Use known references and appropriate instruments for dimensional verification.

For invalid polygons, check duplicate vertices, boundary order, intersections and source data. Do not change EPSG arbitrarily: geometry validity and coordinate reference are different issues.

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07 GPS tracks and cursor

The GPS menu separates cursor visibility, centring, following and recording. You can display your position without recording, or change the view while recording continues.

Record a route

1. Outdoors, allow location access and check that precise location is enabled.
2. Open **GPS → GPS track preferences** and check available capture and quality settings.
3. Wait for a recent fix with suitable accuracy. Walls, vegetation and obstructions may degrade it.
4. Tap **Start GPS recording** and check the active state.
5. Pause and resume to exclude stops. Distinguish a pause from loss of fix and final stopping.
6. Stop at the end and wait for saving. Check the track layer and endpoints before closing.

Set the cursor

GPS preferences provide available shapes, size and opacity. The accuracy halo helps show positional uncertainty. A smaller symbol improves readability without improving GPS precision.

Use **Centre on GPS** to find the cursor and **Follow GPS position** to keep it in view. Manual panning may stop following; check command state.

An initial location may take time. Check permission, precise location and accuracy before inserting features. An old reading must not be treated as a current fix.

Quality and continuity

The phone receiver alone does not guarantee sub-metre accuracy. Stricter filters may accept fewer points and produce sparse tracks; they cannot recover an unmeasured true position.

First record a short known route and inspect timing, stops and shape. Also test background behaviour: permissions, power saving and iOS management affect continuity. Test under the intended working conditions before an important survey.

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08 Import and coordinate systems

Import from Files, multiple selection or a folder. Generic and dedicated commands serve different workflows: external LAS files use the dedicated LiDAR import.

Prepare and import

1. Keep originals and ensure cloud files are downloaded locally.
2. Keep multipart datasets together with matching base names. Use the Shapefile workflow with its required companion files, normally in a ZIP.
3. Open **All commands** → **Data import** and choose the format or file/folder import.
4. Select data and wait for the summary. Read imported dataset counts and reasons for ignored files.
5. Check layers, counts, attributes and map extent. A successful import alone does not prove correct coordinates.

Available workflows include GeoJSON, CSV, GeoPackage, Shapefile, KML, GPX, DXF and rasters. Actual compatibility depends on internal structure as well as extension. Generic JSON is not automatically a FieldCore project; ZIP content must follow the expected structure.

CRS and EPSG

A CRS defines coordinate interpretation; EPSG codes identify many common systems. The map works in WGS84 and can transform supported sources. **Assigning a code is not reprojection.** If a CRS is absent or unrecognised, inspect the source in GIS software and export it in a supported system.

For CSV, check latitude/longitude columns, order and decimal separator. Metric easting and northing must not be read as degrees. A raster world file describes pixel transformation but does not by itself identify a CRS.

Large projects

Import in groups, maintain thematic layers and test a sample. Complex geometries, labels, photographs and long tables affect memory and time alongside feature count. Read any limits in the import summary.

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09 Rasters and basemaps

A raster is a spatially positioned image, such as an orthophoto. A basemap is the cartographic background. WMS and XYZ services provide network imagery. These resources have different management workflows.

Import a GeoTIFF

1. Provide the TIFF and any `.tfw` and `.prj` companions without renaming them separately.
2. Select all files together or import their folder. A TIFF alone works only when it contains the required information.
3. Start raster import and wait for preparation.
4. In **Layers**, check visibility, opacity and extent.
5. Compare at least two recognisable positions against reliable mapping. Check position, orientation and dimensions.
6. Close and reopen the project to check retention.

For “CRS cannot be interpreted”, obtain a valid EPSG or re-export. For “invalid geometry”, also inspect extent, pixel transform and metadata. Do not drag an image to hide a displacement without understanding its cause.

Manage the background

Open **Basemaps** or **Layers → Online maps and services**. Select a source and check coverage. Some providers require credentials or your own key; use dedicated fields and follow service terms.

Manage imported raster appearance or removal in **Layers**. Edit or remove a personal online source through its own map-service actions instead.

Quick diagnosis. If the background appears but the raster does not, check raster visibility and extent. If all online sources fail, check network and provider. A preview in Files proves that the image is readable, rather than usable georeferencing.

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09 Configure WMS and XYZ services

WMS publishes a layer catalogue and generates images for a requested area. XYZ publishes tiles through a URL template. Pasting one service type into the other form does not create a valid source.

Add a WMS

1. Open personal maps and choose WMS configuration.
2. Enter a name and the provider’s service or GetCapabilities URL.
3. Tap **Load layers** and wait for the catalogue.
4. Open **Choose layers**, select needed layers, and check order and style. Multiple layers need a compatible shared CRS.
5. Check CRS, image format and required dimensions such as time or elevation.
6. Save. The app tests a raster request before completing setup; read compatibility warnings.
7. Visit a covered area and try several zoom levels. A successful compatibility check does not guarantee imagery everywhere.

Reopen the personal source actions to change settings or remove that source. Do not confuse source removal with project deletion.

Add an XYZ

Enter the exact URL template with the provider’s placeholders, usually `{z}`, `{x}` and `{y}`. Supply attribution and supported zoom limits. Attribution is the mapping credit, rather than a waypoint attribute.

Use provider specifications for tile size and zoom levels. A responding server may still return transparency, out-of-coverage imagery or unavailable scale content.

When nothing appears

Check URL, public access or credentials, coverage, zoom, selected layers, style and time/elevation dimensions. Retain WMS exception text and a credential-free URL for support. Proprietary extensions may not be supported. Download and redistribute data only as permitted by the provider.

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10 OpenStreetMap and offline work

Imported OpenStreetMap vectors and offline map images are different products. Vectors can contain geometries and attributes; background images do not automatically become editable features.

Download OSM data

1. Open the OpenStreetMap download command.
2. Choose the supported area or locality and relevant categories.
3. Start with a limited extent and wait for the service.
4. Check resulting layers, attributes and sample positions.
5. Keep imported information separate from your field observations so that provenance remains clear.

Content depends on community and service coverage and currency. A missing feature does not establish that the real object is absent. Preserve attribution and licence terms when sharing.

Prepare an offline map

Open offline download, select an area and available zoom range. Check estimates and limits: higher zoom can quickly multiply tiles and storage.

Use the offline map archive to manage saved packages. Providers differ in download permissions. An Apple map seen online is not automatically stored by another source’s offline command.

Test before leaving

- Open the project and working area online.
- Briefly enable airplane mode and reopen the area, attachments and local data.
- Check several scales, not just the download’s initial view.
- Restore connectivity and check sensor and account states.

GPS and local data may remain usable while address search, new routes, online WMS and remote readings need network access. Road and analysis tools use available data; incomplete output does not replace a survey or checks of the real network.

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11 Capture and archive a LiDAR survey

Scanning acquires a point cloud and, when available, synchronised photographs, mesh and metadata. One survey may contain several LAS segments belonging to the same capture; keep them together.

Prepare

Open the correct project, then **LiDAR**. Use its archive as the reference for scans, revisions and derived products. Check hardware, camera permission, free storage and thermal state.

Choose a stationary, well-lit subject. Glass, mirrors, glossy or uniform surfaces and moving objects may produce gaps or unstable geometry. Handheld scanning does not provide certified measurements.

Capture

1. Start a scan from the archive or LiDAR menu.
2. Allow tracking to stabilise before covering the entire scene.
3. Move slowly with overlapping passes and changing viewpoints. Keep previously observed visual references in view.
4. Check quality, photographic capture and recognition indicators when enabled.
5. If warned about temperature, memory or poor tracking, stop moving and follow the message. Do not force a session that is not acquiring valid data.
6. Finish and wait for saving. Keep the app open during finalisation.
7. Open the survey and inspect the cloud, photographs and available products before leaving the site.

Check coverage

Inspect sides, tops and low areas rather than only the initial view. Double surfaces may indicate misalignment; empty areas may never have been observed. Many points do not guarantee uniform detail.

For longer work, use manageable portions with recognisable shared areas. Keep originals before classification, alignment or export. Deleting a survey family can affect associated photographs and meshes; read the operation summary.

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11 Calibration and scanning while moving

Tracking estimates camera position and orientation during capture. The app uses ARKit's reference and checks data quality before consolidation. Initial calibration helps assess stability; overlap and drift checks remain necessary for long surveys.

Prepare for movement

1. Before recording, open **Calibrate → Calibrate now (hold still for 2 s)** and keep the phone stable.
2. Read calibration state. If another calibration is needed, repeat with sufficient light and visual detail.
3. Keep ordinary mode for controlled capture. **Precise pose filter** rejects shaky or inconsistent poses more strictly.
4. For a slow walking trial, enable **Calibrate → In motion (experimental)** before recording. This setting cannot be changed while recording or saving.
5. Make a short test, revisit a recognisable detail and inspect alignment before extending the survey.

Walk during the test

Move slowly without pronounced swings. Keep already observed areas in view, turn gradually and briefly slow down for sharp photographs. Moving mode is more permissive for geometry, while photographs retain their own quality checks.

If tracking becomes unstable, stop and return to a recognisable area. Accumulation may pause to protect against inconsistent data; read the message. Indiscriminately relaxing tolerances can increase doubled points and distorted surfaces.

Evaluate results

Compare the trial with a short ordinary scan of the same subject. Check edges, floor and closure at the starting point. Assess point coverage and photographic coverage separately.

Experimental function. Use controlled tests on compatible devices. It does not guarantee uniform scanning at any speed, hidden-surface reconstruction or survey-grade accuracy. Check the installed version if the option is missing.

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11 Extend an existing survey

Add segments to survey, in the survey family's archive actions, adds a new capture. Use it to complete an area or extend a room while retaining the original survey reference.

Resume on site

1. Open the project and identify the correct survey by name, date and thumbnail.
2. Keep a copy before extending, especially when revisions and checked LAS-tags already exist.
3. Choose **Add segments to survey** and follow the displayed resume and reference instructions.
4. Start in an acquired area with stable, well-distributed visible details. Extend into the new area while retaining an overlapping strip.
5. Finish, wait for saving and check the new segments against the previous ones.
6. If an offset remains, use the correction workflow for that family and inspect the resulting revision before export.

Conditions to check

Restarting the camera may establish a different local reference. Assigning files to the same family does not prove alignment. When surroundings have changed, compare stable details rather than people or moved objects.

Avoid adding a distant room without a recognisable connecting area. A floor helps compare elevation and inclination but a uniform plane alone does not determine horizontal position and heading.

Inspect the extension

View from at least two directions and look for double surfaces in overlap. Compare elevations and images. Check tag anchors and utility lines against the chosen revision. Use a survey package or session with attachments to retain the whole workflow.

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12 Synchronised photographs and fusion

Point colours, photographs and mesh textures are different representations. Fusion uses camera images and poses to texture surfaces. A photograph attached to a waypoint is not automatically a calibrated survey photograph.

Acquire useful coverage

1. Observe the subject from several angles with overlapping passes.
2. Change height to cover tops, recesses and low areas. Rotating on the spot does not remove occlusions.
3. Avoid abrupt movements, moving subjects, strong backlight and changing illumination.
4. Improve lighting first in dark areas. If using the available torch control, avoid direct reflections and overheating.
5. After capture, verify that photographs were saved, rather than only that the camera was active.

Image collection adapts to device load. The app does not necessarily record continuous video or use every frame. Useful calibrated photographs can improve coverage but cannot replace sound geometry.

Check in the viewer

Compare the RGB cloud, photographs and available fusion or Morph view. Use **Reload photographs and fusion** after product updates. Check photograph count and mesh availability.

A gallery image may be unsuitable for mesh projection if calibration or pose is missing. Older surveys may contain image planes rather than a fully textured surface.

Interpret defects

Holes. Missing points or mesh faces require geometry; higher texture resolution does not create it.

Double or displaced textures. Check alignment and consistency among photos, mesh and LAS revision. Keep products from the same revision.

Low detail. Check distance, light, sharpness and coverage. The viewer may reduce samples or quality for memory and temperature. Also inspect the exported product because preview and full export may differ.

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12 Compare points textures and surfaces

When available, **RGB points**, **Texture**, **Surfaces** and **Fusion** answer different questions. Comparing them distinguishes missing geometry from existing geometry without a usable photograph.

View	Inspect	Interpretation
RGB points	Cloud samples and their colour	Shows existing points; does not ensure a continuous surface
Texture	Images projected onto available surfaces	Reveals photograph sharpness, exposure and consistency
Surfaces	Textured mesh and untextured geometry	Neutral areas may contain valid geometry without a usable image
Fusion	Combined available products	Compare against points and mesh from the same revision

Adjust and check

Open the available photograph and fusion controls and change one parameter at a time. Keep the original and compare the same area from the same distance. Note settings, saved image count and results; changing every setting together hides which change helped.

Prioritise sharp photographs from different directions. The total count alone does not measure coverage: many similar frames may leave the opposite side unseen.

Distinguish three problems

Points exist but no surface. Check mesh and quality filters. A photograph cannot automatically create absent faces.

A surface exists but appears neutral. Check calibrated images, sharpness, angle and revision. Surfaces view also keeps untextured geometry readable.

Photographs and geometry disagree. Check alignment, origin and associated products before increasing resolution. Reload matching products after processing.

An apparently closed surface is not proof of complete coverage. Also inspect hidden areas, recesses and object backs.

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13 LiDAR objects classes and bounds

Surface classification and object recognition are different functions. A wall classified in the mesh does not imply an individual recognised object with its own bounds.

Find and classify objects

1. Open a native scan and check that valid recognition metadata exist.
2. Open **Actions → View and layers → Layers mesh and objects → Edit bounds → Find and classify objects**.
3. Search by name or category and select only intended objects.
4. Check position, rotation and dimensions against the cloud. Correct inconsistent bounds first.
5. Choose the object class or selected brush class as offered by the command.
6. Apply to selected areas, inspect, save and reopen the correct revision.

Bounds tools include movement, rotation, scaling and fitting to points. A box selection includes points within its extent; it does not perfectly separate an object from the floor or background.

Understand bounds

A 3D box describes estimated extent. It is not actual material volume, does not necessarily close a surface and does not prove the object's back was observed. Recognition confidence is not geometric accuracy.

If objects are missing, check whether recognition was enabled and detections were saved. Missing boxes do not by themselves indicate viewer failure.

Understand saved files

LAS retains point classes but may not identify each object separately. Objects in one category can share a class; JSON metadata describe individual objects. Document application-specific codes for other software. Chapter 18 covers DXF, mesh and complete packages.

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13 Align overlapping segments and surveys

ICP seeks a geometric transformation using shared cloud areas. It is an explicit operation, rather than alignment of every archive file. It cannot establish a meaningful relationship between non-overlapping surveys.

Choose the correct workflow

Segments of one survey. Work within one capture family and its segments to correct internal offsets while preserving links to originals.

Separate surveys. Select captures of the same area with sufficient overlap and a consistent initial reference. Missing origin information does not mean they already share one local system.

Check alignment

1. Keep a copy and choose the appropriate archive alignment command.
2. For separate surveys, choose fixed and moving references deliberately. Project membership alone is not a reason to include a file.
3. Run calculation and read quality checks. Insufficient overlap, unreliable corrections or inconsistent products can cause rejection.
4. Open the derived result and compare edges, floors and shared details in several places, especially at the ends.
5. Also check photographs and mesh. Retain originals until the revision is checked and exported.

Photographs and mesh after ICP

With consistent inputs, the procedure updates image poses and mesh transforms automatically. This does not resample photograph pixels. A single mesh shared across segments needs a verifiable rigid reference; it is not freely warped to follow every local correction.

Other products are not automatically guaranteed to follow. Bounds, trajectories and AR references may remain only in originals, with omissions reported. Read the result report before delivery.

A low residual does not certify absolute accuracy. Repeated walls and nearly planar surfaces can produce ambiguous matches. ICP does not replace global tracking reconstruction or independent measured checks.

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13 Create LAS tags in the cloud

A **LAS-tag**, or 3D tag, connects a cloud position to project information, sensors or media. Its anchor remains in the 3D reference as the view changes. A recognised bounds label differs from a waypoint-linked LAS-tag.

Link a waypoint or sensor

1. Prepare the waypoint and check its data, sensors or links.
2. Open the original local survey in the 3D editor. In **Layers mesh and objects**, open **Information in the cloud**. Add tags to the original metric LAS before creating a geographic copy.
3. Choose **Add LAS-tag from waypoint or sensor…** and select the project feature.
4. Move closer and tap a cloud point near the intended position. Zoom in and retry if no point is found.
5. Rotate to check the anchor from the side. A top-view match can conceal incorrect elevation.
6. Tap **Save** and reopen the revision to check retention.

For a recognised object, select its bounds and choose **Link LAS-tag to selected object…**. Disabled commands may indicate no available project features or no selected object.

Control visibility

Enable **Sensor and waypoint labels**. In crowded scenes, choose **Selected feature only** and hide unnecessary bounds. **Available LAS-tags** helps distinguish absent tags from hidden ones.

Preserve links

Tags require survey metadata and links to project features. Copying a standard LAS alone does not guarantee dashboards, URLs and anchors. Export a **.smab** session with attachments for the complete experience and test reopening.

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13 Edit tags and reach a point

Links can be added and edited after capture. Open the intended revision and keep the original before extensive changes.

Long press to edit

1. Hold a LAS-tag for **three seconds** without dragging the view.
2. Choose **Edit text URL and type…**. Alternatively, select the tag and use **Edit LAS-tag info/URL…** in **Information in the cloud**.
3. Update title and description. Enter a complete HTTP or HTTPS URL without embedded credentials.
4. Choose **info**, **sensor** or **video**, or the corresponding quick action for information, sensor/dashboard or video/link.
5. Confirm the form, tap **Save** in the editor, then reopen and test.

Changing type to sensor does not create a data source; configure the sensor in the linked waypoint. To stop using a video, change its type to information. Leaving URL blank may retain the earlier address.

Explore at real scale

Select the tag and use **Go to LAS-tag 1:1** or **Go to point 1:1**. The virtual camera approaches its anchor. In immersive view, the left joystick moves your viewpoint and the right joystick changes viewing direction.

For data, use **Open selected LAS-tag details**, or **Open details** in the long-press menu. Tapping media opens their content. If the first tap only moves closer, use the explicit details command.

Understand the 1 to 1 view

This is virtual model navigation, rather than a pedestrian route or accessibility assessment. Elevation, scale and position depend on the cloud and anchor. Check several viewpoints and compare with the real object before using a tag as a reference.

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13 Tag list associations and indoor paths

Tag list and associations gathers cloud references in a searchable table. Find a tag even when its label is hidden, distant or obscured.

Find a feature

1. Open the 3D editor and **Tag list and associations** from its button or cloud information commands.
2. Search by name or available information. Filter linked elements and those still needing association.
3. Select a row and use **Frame in cloud** to view its anchor.
4. Choose **Open details**, or **Link waypoint or sensor** where available.

State	Meaning
Associated	A link exists to an available project feature
Not associated	The reference has no project link yet
Link unavailable	A reference is saved, but its linked feature is unavailable

An association does not guarantee a remote sensor is online. Check reachability, reading time and dashboard configuration separately.

Define the path

Choose **Indoor path** and follow instructions to draw a floor sequence from start to destination. Tap surveyed surfaces, correct with **Back**, then confirm with **Save path**. Afterwards choose **Show path** or **Walk in 1:1**.

The user defines and verifies the route; the cloud does not automatically establish passable spaces. The function requires a metric cloud with a compatible vertical direction. Use the original local LAS when requested. If the cloud or destination changes, check and redraw the route. Save and reopen the revision to verify it.

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13 Video and links in the viewer

A video/link LAS-tag opens content while retaining the cloud context. A thumbnail represents the link; it does not prove playback, download or offline availability.

Add and open content

1. Prepare a project link or edit an existing tag with a three-second press.
2. Enter the full URL and select **video**. Content may be a supported video or web page.
3. Save the edit and cloud revision.
4. Tap the label or preview to open its panel. **Find video and media** in cloud information helps locate obscured or distant links.
5. Use playback controls. Some services require another Play tap or opening their own app.

Resize and close

Use the panel controls available in your version to adjust display. **X** closes content. The external-open arrow opens the provider’s site or app; it is different from enlargement.

Show only the selected label to reduce clutter. To edit the reference position or orientation, inspect its model anchor first. Moving the camera changes only the viewpoint.

Unavailable video

YouTube and other providers may restrict embedding, require login or block particular content. If playback fails, try the external-open button. Full screen does not remove service restrictions.

Before presenting, test the link on the recipient device. For offline work, include supported local content when the workflow allows it. A remote URL alone is not a video copy.

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13 Utilities and geographic references

3D lines and polylines can represent power, water, drainage and ventilation when a session contains compatible 3D vertices and metadata. A map line does not automatically gain the correct building elevation.

Read utility networks

Open **Layers mesh and objects → 3D utilities** and enable **Show lines and polylines**. Isolate networks by category. Inspect plan and side views, especially floor changes and vertical connections.

LAS classes, utility lines and labels have different roles. A line colour does not classify nearby points. Before classifying, check selection, tolerance and target class; keep an earlier revision.

Local cloud and map

For a local LAS, open map alignment and set the required reference. Check position, rotation, scale and elevation using several recognisable details. The cloud centre alone cannot establish heading.

Save classes, tags and bounds first. Choose **Create georeferenced LAS copy** and confirm **Create copy**. The transformation covers all survey segments and associated products while preserving local originals. Output uses Cartesian WGS84 **EPSG:4978**, in metres, rather than latitude/longitude degrees. Read export warnings.

Check before delivery

1. Compare two well-separated map points and a reliable vertical reference.
2. Reopen derived LAS and inspect units, axes and declared CRS.
3. Check mesh, tag anchors, 3D paths and photographs from the same revision.
4. Include required metadata and identify local and georeferenced products.

Visual alignment on satellite imagery supplies context rather than measured georeferencing. Defined tolerances need known references and independent checks.

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13 Measurements and survey points in the cloud

You can measure the cloud and retain points and geometries in a survey revision. Accuracy depends on source points and reference. A numerical result does not turn a scan into a certified topographic survey.

Measure and retain points

1. Open the 3D editor and choose **Measure**, or **Actions → Cloud measurements**.
2. Check LAS units and vertical axis when requested. For degree-based coordinates, use an appropriate metric copy.
3. Choose **Distance**, **Path**, **Plan area**, **Angle** or **Survey point**.
4. Tap points in order. Zoom in if no surveyed surface is found. Complete path or area vertices and tap **Finish**.
5. Inspect from several directions. Plan area is a projection, not inclined wall or terrain surface area.
6. Tap **Save** to retain measurements in the revision.

Create geometries from points

Open **Survey points and geometries…**. Select distinct points in vertex order and choose **Create line** or **Create polygon**. Lines need two points; polygons need three. Check sequence, closure and crossing edges.

Long-press a row for available name, category and position edits. Read warnings before deleting a point used by other geometry. Save viewer changes.

Export the coordinated survey

Use **Export coordinated survey…** or **Export** in the list. The package combines supported deliverables such as point and measurement tables, CAD geometry and viewing documents, retaining available source references. Use **Share measurements CSV** for a simple table.

Geographic GeoJSON requires a valid reference. Exporting local coordinates does not make them latitude and longitude. Check units, axes and included products in the destination software.

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14 Import external LAS files

LAS import lets you view externally produced clouds. It differs from the native scan workflow, which also has capture metadata, photographs and other associated information.

Import and inspect

1. Save the LAS in Files and ensure it is downloaded rather than only listed in cloud storage.
2. Open the project's LiDAR archive and choose LAS import.
3. Select a supported uncompressed LAS. Reader versions and point formats are limited; LAZ is not interchangeable.
4. Wait for the local copy and preview.
5. Check axes, extent, colours and scale. A sampled preview can show fewer points than the original.
6. Retain the source and CRS information for comparison in GIS or cloud software.

Compare with a native survey

Content	External LAS	Complete native scan
Points and LAS attributes	Depends on source format and fields	Produced by capture and revisions
Calibrated photographs	Not created by import	Present only if captured and saved
Mesh and bounds	Not automatically reconstructed	Available when associated products exist
Editing and AR	Not equivalent to native workflow	Require compatible data and hardware

Opening a LAS does not automatically reproject or run ICP. A map placeholder does not establish geographic positioning of a local cloud. Do not read metric coordinates as latitude and longitude.

If opening fails

Check compression, version, point format, size and integrity. Reader limits protect memory. For very large data, prepare a reduced copy using a suitable tool and retain the original. Renaming `.laz` to `.las` does not convert it.

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15 Augmented reality viewing

AR overlays survey products on the camera. It needs a compatible device and a native local scan in metres. A geographic export or external LAS does not automatically provide the required reference.

Open and place

1. Open the original scan cloud and choose AR view.
2. Check camera permission, light and thermal state. Aim at recognisable surfaces and wait for tracking.
3. Use **Auto / Retry** to attempt place restoration when compatible AR references exist.
4. If restoration is unavailable, choose **Manual**, aim at a surface and use **Place base centre**.
5. Adjust position and heading using the controls. Compare several real details rather than one point.
6. Toggle points, bounds and mesh for a readable overlay. Save the place only when enabled and reliably positioned.

Common messages

Open the original local cloud. Return to the archive and open the scan LAS rather than its geographic export.

Place restoration unavailable. The reference may be absent, missing from the copy or unusable. The cloud may still be valid; consider manual placement.

Mesh absent. No mesh is available for this view. Displaying points cannot create one.

High thermal state. Rendering may be reduced or paused. Allow cooling and follow available controls.

Use appropriately

AR alignment assists visualisation rather than metrology. Environmental changes, poor light and unstable tracking can move the overlay. Do not rely on it to locate hidden utilities or make safety decisions. After ICP, check which references actually transferred to the derived result.

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16 RoomPlan for interiors

RoomPlan creates a simplified interior representation, separate from the LiDAR cloud and photographic fusion. Recognised walls, openings and objects do not reconstruct every surface completely.

Capture a room

1. Open the RoomPlan workspace from LiDAR and check device support.
2. Start a room and follow camera guidance.
3. Move slowly and observe walls, corners and openings from several viewpoints.
4. Stop extending into new areas when tracking is unstable or capture is failing.
5. Finish, wait for processing and save with a clear name.
6. Inspect **2D** and **3D** dimensions, openings and objects before exporting.

Divide large buildings into manageable rooms or sections. Separate captures are not automatically aligned because they share a project. Facades and long outdoor distances are not equivalent uses of this mode.

Correct and compare

Open **Correct** where available and check edits against real references. Keep the original. Modified CAD and original model exports may describe different states; inspect each separately.

Floor area, object bounds and actual volume are different quantities. Simplified surfaces may not form closed solids. Check missing objects and simplified elevations in the delivered format.

Export

Choose **Export** and an offered format such as 3D model, DXF, PDF or JSON. Open it in a compatible app. The original USDZ does not necessarily incorporate later CAD or JSON corrections.

After an unexpected closure, inspect saved content first. Record the action, duration, message and device conditions. Check temperature and storage before repeating a long session.

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17 AprilTag and control points

An AprilTag is an identifiable visual reference. It becomes a geometric control point only when its physical reference has been measured in a known system. A printed code alone supplies no survey coordinates.

Prepare references

1. Use compatible tags and print without changing proportions. Manual illustrations are not targets.
2. Measure the required physical dimension and enter it in the correct unit.
3. Fix tags on stable visible surfaces, avoiding reflections, folds and movable objects.
4. Distribute them across the area and, where useful, at different elevations. A cluster in one corner poorly controls the rest of the scene.
5. Record IDs and measured centre coordinates with CRS, units and vertical reference.

Use project controls

Open AprilTag tools from the command centre and configure the requested references. Match detected IDs to physical points before use. Keep operational IDs distinct.

Reserve some measured points as **independent checkpoints**, excluding them from the alignment calculation. Agreement at transformation controls alone does not measure error in uncontrolled areas.

Evaluate results

Compare residuals across edges, elevation changes and areas far from main controls. For systematic offsets, check tag size, units, axes, coordinates and support stability before adding corrections.

Phone GPS, visual recognition and LiDAR have different uncertainties. Combining them does not automatically provide centimetre accuracy. For defined tolerances, plan verification and retain coordinates, provenance and check results.

The separate **AprilTag and control points manual** provides further target-layout guidance. Keep its coordinate conventions consistent with the project.

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18 Export data and LiDAR products

Choose exports for the recipient. Viewing documents, GIS files and survey packages retain different information. A listed format cannot necessarily represent every attachment or project function.

General workflow

1. Open **Export project** from the command centre.
2. Choose format, data and available options.
3. Check CRS, included geometries and attachment handling.
4. Wait for generation and save to Files or use the iOS share sheet.
5. Open the result in the destination app and compare a sample with the original.

Goal	Product to consider	Required check
Mapping exchange	GeoPackage, GeoJSON or another offered GIS format	CRS, geometry, fields and links
Data table	Excel (.xlsx) or CSV (.csv)	Layer, attributes and WGS84 coordinates
Viewing	Area PDF or SVG	Scale, legend and framed area
Mobile or desktop exchange	Package required by the destination workflow	Reopening and attachments
LiDAR survey	Individual products or complete package	Revision, segments, photographs, mesh and metadata

LiDAR products

In the survey archive, choose **More actions** → **Export individual products**. Prefer the unified package when retaining links among LAS segments, mesh, photographs and metadata.

LAS retains available points, colours and classes. **OBJ mesh** contains surfaces and is not automatically a complete textured model with materials. **Bounds DXF** represents boxes using 3D lines rather than closed solids. Coordinates may be local metres with axis conventions different from GIS.

Individual files are family products or segments, rather than necessarily one file per recognised object. After ICP, use matching products from the same revision. Do not deliver an aligned cloud with incompatible original photos or mesh.

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18 Export Excel and CSV tables

Table exports deliver attributes and geometry for **one layer at a time**. Excel and CSV are in **Interoperable export**, opened from **Export project**. They are not complete backups and do not embed linked photos, videos or documents.

Prepare and save

1. Finish waypoint edits in the open project.
2. Open **Export project** → **Interoperable export** and choose **Layer to export**.
3. Select **Excel (.xlsx)** or **CSV (.csv)** and start. Complete the project PIN prompt if required.
4. Wait for **Preparing export…**, keeping the panel open and the app foregrounded.
5. Use iOS sharing to save in Files or another destination.
6. Reopen and check feature count, headings, accents and sample coordinates. Repeat for other layers.

Format	Content	Typical use
Excel (.xlsx)	ID, WKT geometry and attributes; numbers and Boolean values retain their types	Spreadsheet browsing and analysis
CSV (.csv)	ID, WKT geometry, latitude, longitude and attributes; semicolon-delimited UTF-8	Table exchange, GIS and import workflows

Coordinates and geometry

feature_id identifies a feature; **geometry_wkt** holds WKT geometry. Exported coordinates are WGS84. Geometry uses longitude then latitude, in degrees, rather than projected metres.

CSV latitude and longitude columns describe the point location. For lines and polygons, they refer to the **first vertex, not the centre**. Use **geometry_wkt** for the full shape, including polygon interior rings. Heading labels may follow the selected app language; Italian screenshots show **Latitudine** and **Longitudine**.

Attachment paths and URLs remain text references. Use a project package to transfer content, then verify that required attachments open on the recipient device.

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18 Export progress cancellation and table import

XLSX and CSV generation is optimised for large layers without occupying the interface throughout. Duration depends on field count and length, geometry and device conditions as well as waypoint count.

During export

Run one export at a time. **Preparing export…** indicates work in progress; repeatedly restarting or closing the app will not accelerate it.

Tap **Cancel** to stop. If **Cancelling export…** appears, wait: the project is retained and incomplete output is not offered for sharing. Leaving the panel or backgrounding the app also interrupts the operation. Restart when the app can stay open until sharing appears.

Import CSV correctly

1. Use the destination's text/CSV importer if direct opening puts everything in one column.
2. Choose **UTF-8** and **semicolon (;)**. A UTF-8 marker helps detection.
3. Use a decimal **point** for coordinates. Import codes as text where leading zeros matter.
4. Let a CSV reader handle quotes, embedded commas and multiline fields; do not split manually on commas.

Potential spreadsheet-formula text is protected with an apostrophe. Keep that protection when opening third-party data. XLSX numeric values remain numeric, including 0 and 1.

Troubleshoot delivery

No share sheet. Check for cancellation, panel closure or app switching. Retry with the panel visible and sufficient storage.

Excessive waiting. Record format, layer, count, elapsed time and app version/build. Preserve the project.

Long cells. Excel limits cell text to 32,767 characters, including complex WKT. Use CSV with a reader supporting long fields. Opening CSV in Excel does not remove Excel's limits.

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18 Backup restoration and delivery

A backup preserves reopenable work. An export transfers particular information. GeoJSON and PDF files are not complete project copies.

Create a tested backup

1. Finish captures and save viewer and record edits.
2. Generate the supported backup package from the library or project command.
3. Name it with project and date; retain your previous copy.
4. Save outside the app container in a reliable Files destination.
5. Check size and opening. Import a test copy while retaining the original; inspect layers, attributes and important attachments.
6. Keep another separate copy before updates, device resets or extensive cleanup.

Check these contents separately

Sensor history. Local readings are excluded from project backups and packages. Backing up the project does not safeguard that history.

Credentials. Service credentials should not be distributed. Reconfigure them and verify source activation on the receiving device.

Remote data. URLs may require authentication, change or fail offline. A link is not an embedded copy.

LiDAR products. Check all required products and relative references. Moving one LAS away from its photographs and metadata can lose native functionality.

Deliver to others

Include a note with CRS, units, capture date, revision and known limits. Consider encryption for sensitive data and send the password separately. Check that photographs, coordinates and documents can be shared.

Restoration testing is part of backup. A file present in a folder does not by itself demonstrate recovery of every required resource.

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18 Import an SMAB session

.smab identifies MAb FieldCore sessions. A package may include project configuration and linked resources according to its export type. Compatible older formats, such as `.fieldcorepkg.zip`, differ from ordinary GIS data ZIPs.

Download and open

1. Download the received link and save to **Files**. Wait for completion, especially with LAS and photographs.
2. In the project workflow, choose **Import session file**. Do not use generic dataset import.
3. Select the complete `.smab` file without extracting or renaming internal files.
4. Enter the package password if protected. It may differ from the project PIN or account password.
5. Choose whether to activate sensors, then import. Read progress and wait without starting another import.
6. Open the project and check layers, attachments and archive. Test a LAS-tag, photograph and sensor record.

Sensors in a session

Activate all project sensors authorises automatic requests to included addresses while the project is open. Enable it for known endpoints. Otherwise sensors stay disabled; personal credentials are not imported.

A computer’s local Wi-Fi URL may be unreachable from another device or outside that network. Correct the source configuration rather than arbitrarily changing the tag’s spatial link.

Read import state

The progress bar and message identify preparation stages. A percentage is not an exact prediction of remaining time. Retain errors and the original package; check download completion, password, storage and version compatibility.

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18 Export and verify a session

Use the app’s session package to transfer the complete map, cloud, tags and attachments. A single LAS or GIS layer delivers only information representable in that format.

Prepare the package

1. Save project and LiDAR editor changes. Open the intended revision.
2. Check local photographs and documents. Distinguish remote URLs from embedded files.
3. Start session/package export from project actions and select available options.
4. Set and retain a password if requested. Send it separately for confidential content.
5. Wait for `.smab` generation and save through the share sheet.
6. Import a test copy and verify map, layer count, cloud, tags and attachments before distribution.

Content	Check after reopening
Layers and geometry	Position, attributes, style and visibility
Surveys and revisions	Included segments, mesh and photographs
LAS-tags	Anchor, text, type and details opening
Sensors	Configuration, activation and your own credentials
Documents and images	Opening without the source computer
Web links	Availability through the recipient’s network

Exchange limitations

Local sensor history and credentials are not part of the package. URL content may change after delivery. A configured WMS is not an embedded offline map.

Keep one clearly identified delivery version with date, revision and protection status. Share the password separately. Retain originals and the verified package in separate locations.

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18 Use demonstration sessions

Demos provide configured working examples. Synthetic geometry, objects and readings demonstrate the app rather than the actual condition of the represented property or plant.

Scenario	What to explore
Connected home	Floor plan, utilities, documents and environmental readings
Multistorey building	Elevations, vertical connections and tags across floors
Photovoltaic plant	String groups, electrical networks and simulated production
Data centre	Stations, power, cooling and dashboards
Sports field stage	Sectors, utilities, stations and media links
Infrastructure worksite	Alignments, work areas and information points
Road collision	Vehicles, survey points, documents and demonstration geometry

Suggested exercise

1. Download available `.smab` packages from **www.mabfieldcore.it**. Animated previews illustrate scenarios but do not replace full projects.
2. Use **Import session file**, one demo at a time. Public packages requiring it use **FieldCore-Demo-2026**; check the download instructions.
3. Explore floor plans, utilities and points through Layers. Select a station and read dashboard and attachments.
4. Open its cloud, enable tags and 3D lines, approach a point and open the linked record.
5. Edit a title or URL in a copy, save and reopen to test the full cycle.

Demo sensors query a demonstration service when available; they do not measure real equipment. A retained value after failure does not prove the server is active. Test connectivity, reading state and media before presenting.

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18 Photovoltaic demonstration exercise

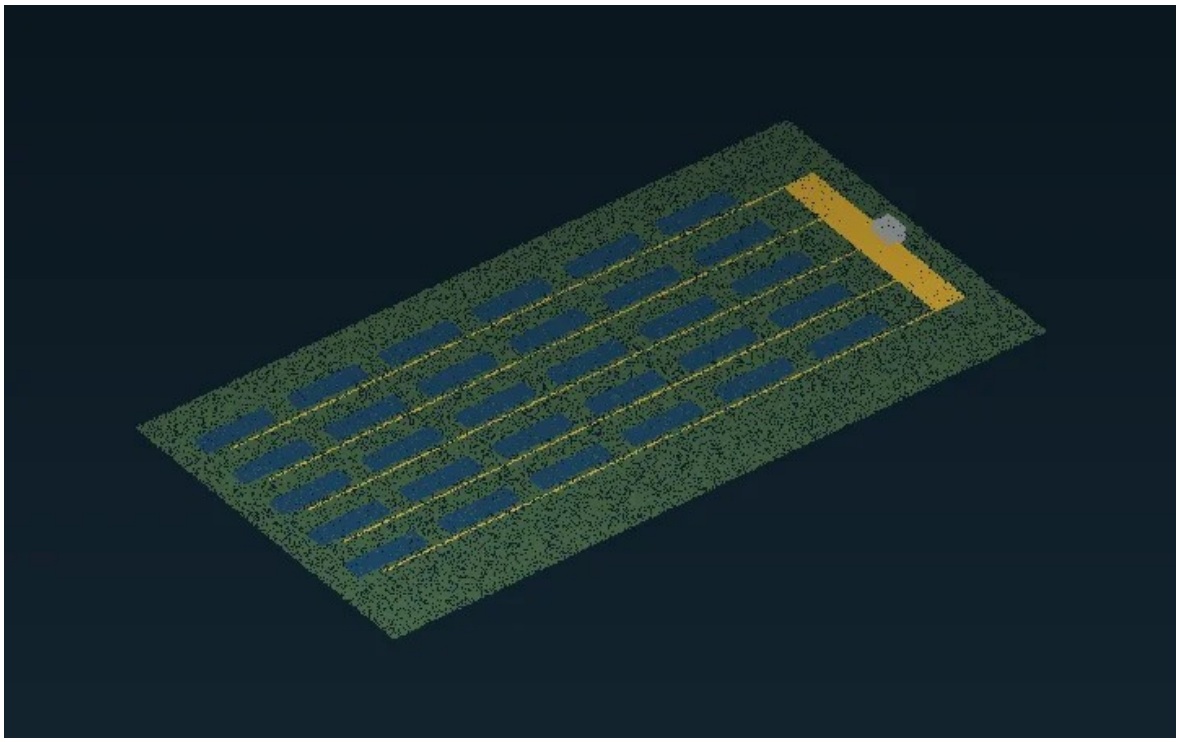

Figure 18A. Preview derived from the MAb FieldCore photovoltaic demo cloud. This is a synthetic model, rather than an app screenshot or a survey of the real plant.

From plan to sensor

1. Import the photovoltaic session. Locate a string group and its station on the map.
2. Open details and check sensor name, quantity, unit and timestamp. Enable and refresh the demonstration source if needed.
3. Open the survey in the LiDAR archive. Show utility lines and sensor labels.
4. Select the corresponding LAS-tag, approach in 1:1 view and use **Open details** to compare with the map.
5. In a copy, edit the tag title, save the revision and export a test session. Reopen it to check the link.

The exercise succeeds when the same element is identifiable in the plan, data record and cloud, with its connection retained after saving.

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19 Local network and external displays

Local network functions let another device view data or content. They are not a public cloud service and do not require opening the router to the internet.

Local TV view

1. Connect both devices to the same trusted network.
2. Open **Local TV view** and start the service.
3. On the other device, enter the address exactly as shown.
4. Verify the intended project and readable information.
5. Stop the service afterwards.

Guest Wi-Fi, client isolation or denied local network permission may block access even when both devices have internet.

Local WebDAV

Open WebDAV, set available options and start the server. Use the displayed address and session credentials on the client. The service exposes content for consultation; it does not guarantee collaborative project editing.

HTTP Basic authentication does not protect traffic like HTTPS. Use a controlled network without forwarding the port to the internet. Keep personal credentials out of screenshots and support requests.

External display and AirPlay

Use the external display panel and relevant iOS controls. Check the destination: screen mirroring, a dedicated display view and Local TV view are different workflows.

Interruptions and closure

Check app and server activity, current address and shared network if display stops. Backgrounding, phone locking or Wi-Fi changes may interrupt access.

Before presenting, open data and attachments, test briefly and remove confidential information. Stop local servers after use.

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19 Share folders and attachments locally

Local sharing exposes available project content while the service runs on iPhone or iPad. It does not replace a backup or make the device automatically internet-accessible.

Connect from a computer

1. Connect to the same local network and grant the app local network access.
2. Open sharing and start the service for the intended project.
3. Use the displayed link, copy command or QR if available. Enter session credentials when required.
4. Try the local hostname if shown. Name resolution depends on network and client; the displayed numeric address remains an alternative.
5. Open a folder and test an attachment download before transferring a large survey.

Do not invent a hostname or omit the displayed port. Addresses may change after restarting the service or changing network.

Check shared content

The session file describes the project. Photographs, documents, surveys and imported resources may occupy shared subfolders; open them and verify actual files. The session file alone need not embed attachments.

If only the session file appears, check the selected project and locally available resources. Remote documents and excluded external files are not made available merely by starting the server. Refresh sharing and reload the computer page after changes.

Finish transferring

Wait for downloads, verify copies and stop the service. For a complete project reopening on another device, also create an **.smab** session with required resources. Manage network and sensor credentials separately.

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20 Navigate with CarPlay

CarPlay offers a dedicated map, waypoint and navigation view on a compatible vehicle display. Configure projects and preferences while parked. A reduced interface does not remove driver responsibility.

Prepare navigation

1. Connect the iPhone and open MAb FieldCore on the car display.
2. Open the project on the phone and check required waypoints.
3. Check GPS, network for route calculation and the applicable plan.
4. Select a waypoint from CarPlay or phone details and choose **Navigate**.
5. Check destination and preview, then start guidance.

When a FieldCore CarPlay session is active, the phone command uses that navigator and may request opening on the display. The system may prevent appearing above another app; open FieldCore manually and read the phone warning. Without an available CarPlay session, normal external navigation is used.

Find and read waypoints

Use lists and search for project points, then open summaries and permitted actions. Reading a record need not replace your route.

Near a waypoint enabled for alerts, its summary may show name, layer and distance with **Details** and **Close**. This is not confirmation of reaching its exact physical position; it depends on GPS and the chosen radius.

Cancel or finish

Use **Cancel** during calculation or preview and **End** during guidance. **Centre** returns the view to your position. **Close** in map-panning mode exits that mode rather than necessarily cancelling the route.

Integration in the shared Music Dashboard is not guaranteed. Road signs, speed limits and alerts may be incomplete; actual signs and conditions take priority.

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20 CarPlay preferences and alerts

Quick settings adjust the display and guidance. Make extensive changes on the phone before departure, and test while parked.

Map and visibility

Choose individual waypoints or clusters, north-up or travel direction, compass and GPS cursor appearance. Size, opacity and accuracy halo should leave nearby points readable. Layer-specific settings may override a general preference.

Essential guidance reduces secondary controls away from turns and restores information when needed. Main instructions, end and centre remain priorities. Poor GPS or an alert may keep the expanded view visible.

Waypoint alert distance

Open radius adjustment in quick settings. Choose **Automatic** or an offered distance from 25 to 1,000 metres. A custom phone setting is retained within supported limits.

Automatic mode adapts to available conditions. Alerts concern the destination, selected point or explicitly enabled layers, rather than every archived point. Waypoint radius differs from turn-announcement lead distance.

Voice and speed

Open **Quick settings** → **Voice guidance**. Enable announcements and choose **Slow**, **Normal**, **Fast** or **System and accessibility**. Use **Listen to a sample**. Changes apply to subsequent instructions.

FieldCore-composed messages and voice choice follow the app language using an available compatible voice; this need not be Siri’s voice. Mapping-service manoeuvre text may have its own localisation. Changing language mid-route does not guarantee all instructions are recalculated.

For overly fast speech, first try **Slow**, then check system preferences. Adjust audio, lists and settings only when safely stopped or through a passenger.

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21 Account plans and privacy

Plan and account shows identity, recognised plan, state and available products. Read current prices, periods and availability in the purchase screen rather than old screenshots or this manual.

Sign in and check your plan

1. Enter your email and request the code through the displayed workflow.
2. Retrieve it and return to complete verification. Keep the code private.
3. Wait for synchronisation, then check account and active plan.
4. Select a product, review price, duration and terms, and confirm only in Apple’s purchase sheet.
5. Wait for purchase and synchronisation results. Refresh the account panel if needed; avoid repeated purchases to resolve delays.

Active and scheduled plans

Your current plan may differ from the plan scheduled at renewal. Some changes apply later under Apple’s subscription management. Check the scheduled next plan, date and expiry before assuming a change failed.

Use **Restore purchases** with the correct Apple account. Restoring purchases is different from restoring local projects and may require verification of the associated FieldCore account.

Sign out deletion and renewal

Sign out ends the app session. **Delete account** requires confirmation and deletes the service account; it does not cancel Apple renewal or create a backup.

Manage renewals through Apple account subscriptions. Back up required projects and read the app’s removal confirmation before deleting accounts or local data.

Errors and privacy

For licensing errors, note code, time, app version and action. Check network, account and purchase state. A temporary error does not alone establish expiry. Read the app’s privacy policy and terms. Keep passwords, access codes and full receipts out of public channels.

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22 Settings performance and support

Settings includes language, performance, cache and working preferences. **Map commands** changes button size, order, removal and visibility across three toolbars. Chapter 03 explains long-press shortcuts. Appearance varies with device, orientation, text size and iOS.

Customise efficiently

1. Choose interface language and check main command names.
2. Start with an available adaptive or balanced profile, then change one option at a time.
3. For large projects, reduce visible layers, overlapping labels and unnecessary online sources. Use clusters for an overview.
4. Increase quality or cache after testing. Device limits may reduce applied memory below the requested value.
5. If the phone becomes hot or slow, save, stop heavy capture and retry in normal conditions.

A larger cache does not add physical RAM. Reduced viewer detail can simplify previews while retaining originals. Back up before deleting project data to free storage.

Report a useful issue

Record device model, iOS, app version/build, affected project or format, time and reproduction steps. State whether GPS, LiDAR, CarPlay, an external screen or a local server was active.

Use available diagnostic and sharing tools. Inspect reports and remove credentials or unnecessary third-party data. For crashes, identify whether capture, saving or reopening triggered the failure.

Contacts

Support: **supporto@mabfieldcore.it**. General information and documentation: **www.mabfieldcore.it**. For data-handling requests, also consult the privacy policy contacts in the app.

A short recording or screenshot can clarify an issue; exclude passwords, tokens, email codes and confidential information. For file problems, start with a non-sensitive sample and keep the original.

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23 Find a place and acquire 3D buildings

3D buildings supports global place search, area selection and acquisition of footprints and heights from available sources. Coverage and height quality vary. Worldwide search does not guarantee complete buildings at every location.

From address to area

1. Centre the project map on your area and open **3D buildings** from **All commands**. Its initial centre matches the main map.
2. Search an address or locality with city and country. For a known position, enter latitude and longitude and check the result.
3. Select a result. This positions the map without yet acquiring buildings.
4. Open **Area and acquisition**. Adjust radius, or select rectangle mode and tap opposite corners.
5. Check height settings and available source, then tap **Load buildings in area**.
6. Wait for completion and verify saving. Use **Save to project** if requested or if edits remain pending.

Choose another area

After acquisition, choose **Select another area**, return to the map and set a new centre or corners. Save pending changes such as facade photographs first. A new place search does not replace an already saved acquisition.

Interpret heights

Heights may be cartographic, source-declared or estimated from floor counts or a default. Check quality in building details. Configurable defaults complete an indicative model when data are missing; they are not surveyed measurements.

If no buildings are returned, check extent, coverage and the service message. Try a smaller area and wait before repeating a failed request.

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23 Acquire and resume a whole municipality

Use **Whole municipality** for a large administrative area. Downloads are organised into sectors, with acquired counts, available buildings and complete or partial status.

Prepare and start

1. Open **Whole municipality** and search with municipality/city and country.
2. Check the result name and boundary. It must identify an available administrative territory, not just a same-named point.
3. Check settings and start the displayed download command.
4. Zoom into **Sectors** to inspect the grid. Green means acquired; orange means pending.
5. Switch to **Live 3D** to explore available content. Scene preparation may take time while downloading.

Pause and resume

Services may require pauses or be temporarily unavailable. Watch progress and avoid duplicate requests. Use **Pause**, then **Resume** to continue with completed sectors retained.

Partial archives remain identified as partial. Use **Save to project** when permitted to retain them. Completion saves the result; always verify the final message and retry failed saving before leaving.

Reopen without downloading

After saving, the municipality appears among available areas and its level appears in **Layers**. Open an acquired sector or the dedicated **3D buildings** map. Stored data can be read without another download.

Test reopening without network before fieldwork. Unacquired sectors and online backgrounds still depend on connectivity.

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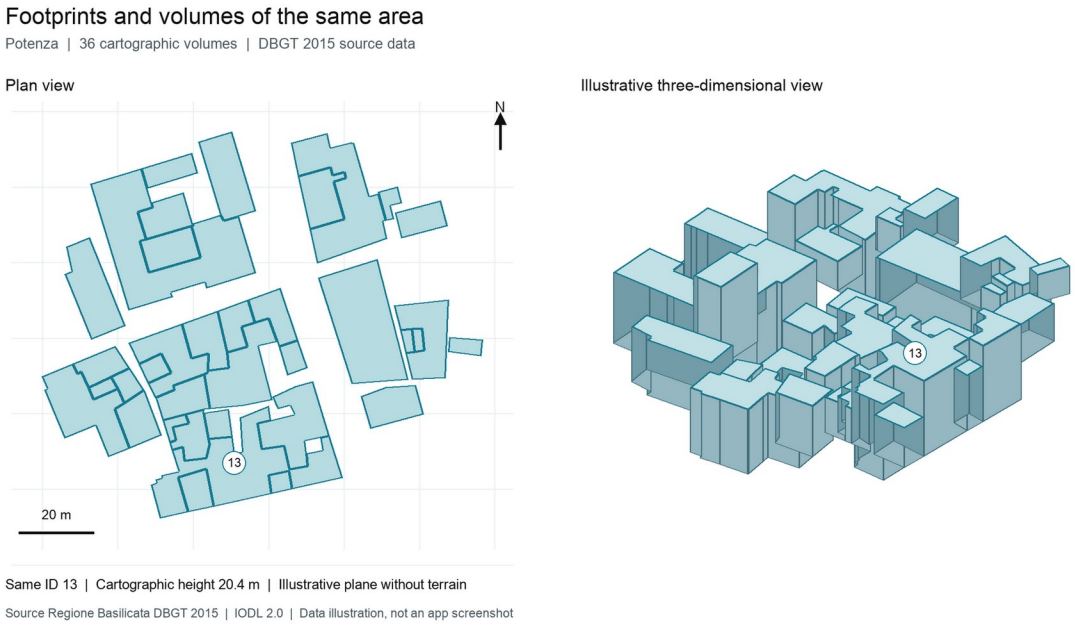
23 Read footprints and volumes

A footprint describes the plan boundary. A volume uses that same contour with a height to provide spatial context while retaining source limitations. Compare both views before matching a model to a survey.



The illustration uses 36 buildings from Basilicata regional mapping in Potenza. It visualises data rather than the app interface. Drawing coordinates are local, heights come from cartography and the base plane is not a terrain model.

Compare the same structure

Select a building and inspect footprint, height and identifier. Rotate and return to top view to recognise its boundary. Distinguish an interior courtyard from covered space.

Models and satellite images may differ in date, detail or currency. Check source and quality before treating a mismatch as positional error.

Figure source: Regione Basilicata, DBGT 2015, IODL 2.0. References: https://rsdi.regione.basilicata.it/dbgt-ctr/ and https://www.dati.gov.it/content/italian-open-data-license-v20.

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23 Display buildings on maps and layers

Saved buildings belong to the project. View footprints on **Apple Standard**, **Apple Satellite**, **Apple Hybrid** and other supported main-map backgrounds. Use the dedicated **3D buildings** map for volumes.

Visibility and symbology

1. Open **Layers** and find the saved area or municipality's **3D buildings** level.
2. Enable visibility and adjust opacity. Check filters and hidden categories.
3. Open **Symbology** for colour, fill or categorisation. Expand the value list only when needed.
4. For height, check **height_m**. Use **height_quality** for provenance and estimates; quality is not a building-height measurement.
5. Save and check different basemaps. Building symbology is shared among areas of this data family in the project.

Small areas and municipal archives may have different layer descriptions. Both support saved footprint mapping. Municipal categories reflect all acquired data, not just the most recently viewed area.

Open details

Tap a footprint for ID, height, quality, source and licence. Municipal details offer **Show in 3D map**. In the scene, selection highlights the building and **Details** opens available information.

Remove overlapping areas

In saved areas, identify an unnecessary download and choose **Delete from project…**. Check name and building count before confirming. Removal applies to that area. Use **Undo edit** where available to recover a recent deletion.

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23 Explore the scene and use GPS

Scene controls manage orientation, framing and layers. Buttons are separate from the display area; scroll a toolbar horizontally if all commands do not fit.

Control the viewpoint

Use **Scene** for the overall extent and **Top view** to compare footprints. **Zoom in** and **Zoom out** change camera distance. After selection, use **Centre building**. Pan, zoom and rotation affect the view rather than building coordinates.

The acquisition section offers **Map**, **3D** and **Compare**. Compare shows the same area in both representations; available space depends on device and orientation.

Centre and follow your position

1. Enable location and allow **Precise location** in iOS when needed.
2. Tap **GPS** to centre your location in the scene. Wait for a valid reading and check accuracy or waiting messages.
3. Use **Follow** to link the viewpoint to device movement.
4. Use **1:1** for the GPS control’s exploration mode. Check location and acquired data availability.
5. Drag or suspend following for free exploration. Outside the acquired area, return to saved data or use **Acquire buildings at GPS position** when offered.

Assess position

GPS may be uncertain indoors or between tall buildings. An offset cursor does not alone prove an incorrect footprint. Compare accuracy, surroundings and source dates.

Scene GPS following is not indoor positioning. The LiDAR cloud’s user-defined indoor route is a separate workflow in chapter 13.

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23 Terrain orthophotos and lighting

Buildings, terrain and base imagery are separate layers. Volumes may be available where no acquired image or usable terrain model exists.

Check resources

Use scene **Layers** to toggle volumes, terrain and **Acquired orthophoto** as available. Compare with and without imagery to distinguish geometry, photographic shadows and applied building colours.

For large territories, the app displays the acquired whole and prepares greater detail near the explored area. Distant blocks may be simplified. Select and approach buildings for footprint or height checks; the overview mainly provides orientation.

Scene light

Lighting settings improve volume readability and, in available modes, use time and position. Check device date and time, then observe changes in shadow and contrast.

Model lighting is a visual representation. It may differ from base-image conditions and is not a specialist solar radiation or shading assessment.

Elevations and offline resources

Without terrain, the scene may use a conventional plane at relative zero. Building height and absolute roof elevation are different quantities. Read quality indicators before comparing external surveys or elevation data.

Acquired and saved resources remain available offline within the app’s stated limits. Apple backgrounds have their own connectivity requirements and are not automatically embedded in building archives. Images may be historical or less detailed than another service; check attribution and time information.

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23 Associate facade photographs

Apply a photograph to a wall to improve building readability. The image textures the cartographic volume; it does not automatically change footprint, height or location and is not a photogrammetric facade reconstruction.

Prepare an image

Photograph as frontally as possible with even light and readable details. Avoid nearby obstructions and strong angles. Crop to the intended wall. Use shareable images and check for people, registration plates and personal data.

Add and correct

1. Open the building in **3D buildings** and choose **Facade photographs…** in its details.
2. In **Photographic detail**, select **Wall**. Side number and approximate length help identify surfaces.
3. Enter **Source / author**. Choose **Photograph facade** where available or **Choose photograph**.
4. Wait for preparation and rotate to check the result.
5. Use **Mirror horizontally** for a reversed image. For the wrong wall, remove the image there and add it to the correct wall.
6. Confirm **Done**, then use **Save** on the 3D buildings screen.

Closing the photo picker alone does not save the project. Untextured walls remain readable as cartographic volumes.

Check delivery

Reopen the area and inspect photographs before session export. Transfer associated content for the complete experience; footprint-only files cannot reproduce every photo.

Inspect perspective-heavy images and non-planar surfaces carefully. The image adds visual context while dimensions remain those of the saved geometry.

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23 Use buildings as LiDAR context

Saved buildings can help identify a scan’s surroundings where **3D building context** controls are available. Cartographic models remain distinct from sensor-acquired points and surfaces.

Prepare comparison

1. Acquire and save local buildings in the project.
2. Open the intended survey or scan and its layers or territory references.
3. Enable **3D building context** where offered and check the selected area.
4. Verify the survey’s location. Local LAS needs a consistent reference and heading for comparison with geographic data.
5. Check at least two sides and base elevation; one view cannot resolve every axis.

Distinguish context and survey

GPS helps locate work but does not solve all differences in elevation, heading or local origin. For translated or rotated clouds, use survey alignment and preserve originals.

Cartographic buildings may have simplified roofs/facades and estimated heights. Do not force a valid scan to fit an indicative volume. Precision checks need measured references and independent validation.

Save and reopen

Save revision changes and test reopening. Deliver a session with required resources rather than a standalone LAS. Building context is not converted automatically into surveyed LiDAR points and does not make an estimate a measurement.

Before resuming on-site capture, separately check tracking, coverage and survey reference. An available urban model does not replace those checks.

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23 Export buildings to CAD and GIS

Use **Export CAD/GIS** in area or municipality tools. Retain geometry, tables, coordinate information and quality together. A screenshot cannot replace exchange data.

Product	Use and verification
GeoJSON	WGS84 footprints with identifiers, heights and quality attributes
GeoPackage	Geometry with elevations for compatible GIS software
3D DXF	CAD contours and surfaces; check units and CRS
CityJSON	Volumes and attributes for compatible urban workflows
KML	Geographic viewing in compatible software
CSV and metadata	Compare IDs, height, source and quality
.smab session	Reopen the MAb FieldCore project with included resources

Prepare export

Select the coordinate system offered for the area and wait. Large municipal deliveries may contain overall products and sector folders. Read package instructions before importing elsewhere.

Elevations retain source-declared references. Without terrain, zero may be conventional rather than an absolute measured elevation. KML may use its viewer’s terrain and look different from the original.

Check another application

Open a small area first and verify location, north, units and building count. Compare one ID and height between geometry and table. Inspect an interior courtyard and a building with estimated height.

Keep the session for full app reopening. CAD/GIS formats do not necessarily reproduce sensors, dashboards, viewing preferences or attachments.

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23 Exercise from place search to delivery

Use demonstration data before a real delivery. This exercise verifies continuity between search, maps, 3D and stored resources without acquiring a new field scan.

Prepare a test project

1. Create “Building test” and search a locality with available buildings.
2. Open **3D buildings**, select a small area and choose **Load buildings in area**.
3. Check completion and saving. Select a building and note ID, height and quality.
4. Switch **Map**, **3D** and **Compare**, identify the same building and use **Centre building**.
5. Return to the main map, open **Layers** and change colour or categorisation. Test Standard, Satellite and Hybrid.
6. Add a wall photograph, save and reopen the area to check association.

Verify persistence

Close and reopen the project. Acquired geometries should be available without another download. Test offline and distinguish saved resources from unavailable online backgrounds.

To extend, save edits and choose **Select another area**. For the territory, open **Whole municipality**, check boundary, pause and resume. Pending sectors mean the archive is incomplete.

Verify delivery

Export CAD/GIS and an **.smab** session. Open an exchange file in destination software and import the session into a separate test project. Compare the noted building, photograph and relevant settings. Retain the original until checks finish.

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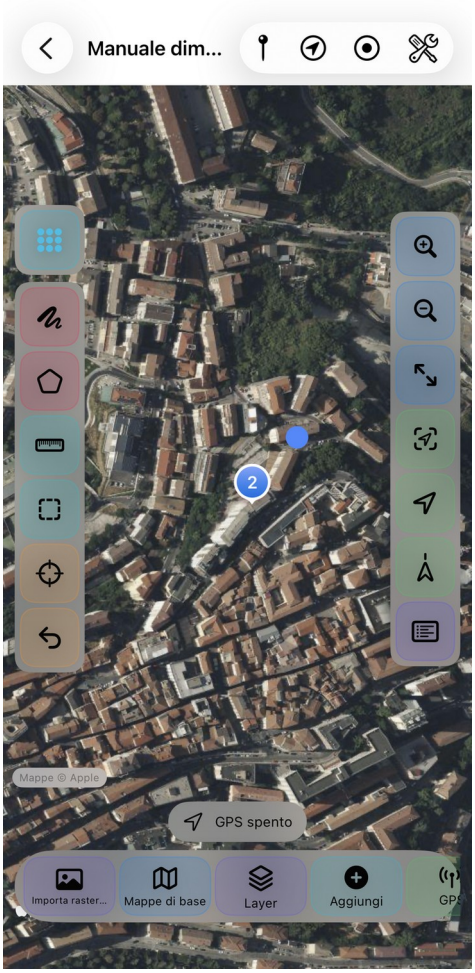
A Reference screenshots

These screenshots were captured on 24 September 2026 in the iPhone simulator using the app's Italian interface and a new demonstration project. Points are fictional; the map is not a real GPS capture. Layout and availability may differ from your installed version. English instructions in this manual describe the corresponding functions; the historical screenshots retain their original Italian labels.



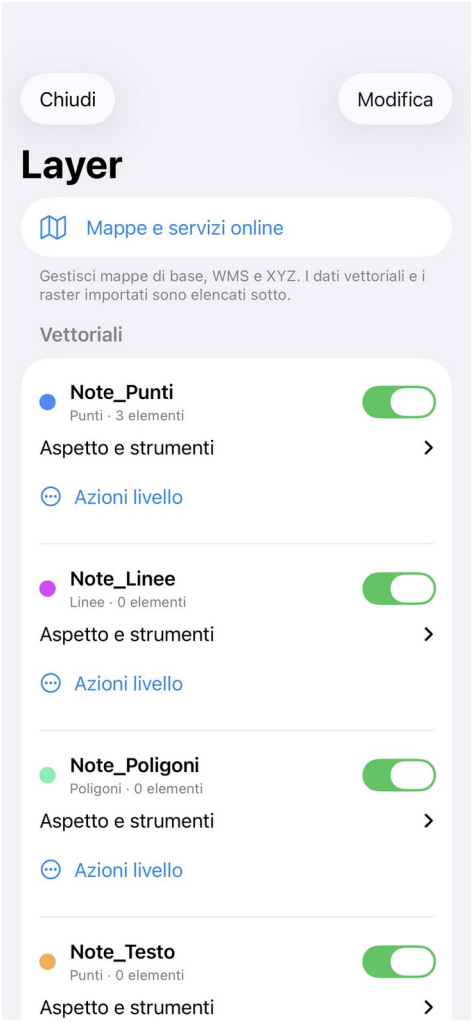


Figure A1. Demonstration map after adding the Import raster shortcut. Shortcuts run only when tapped.

Figure A2. The same project's layers, with demonstration points and management controls. See chapter 04 for visibility, appearance and actions.

These images illustrate screens rather than certify performance, GPS accuracy or physical sensor operation.

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A Command catalogue and search

The catalogue starts with activity groups. Open a group or search a function name as described in chapter 03.





Figure A3. Collapsible groups in All commands, shown in Italian. Scroll vertically for groups beyond the initial screen.

Figure A4. Searching for Import raster. A filled pin indicates an existing map shortcut; tap to remove it. A short tap on the command name runs it.

Historical simulator captures, 24 September 2026. Groups expand automatically during search.

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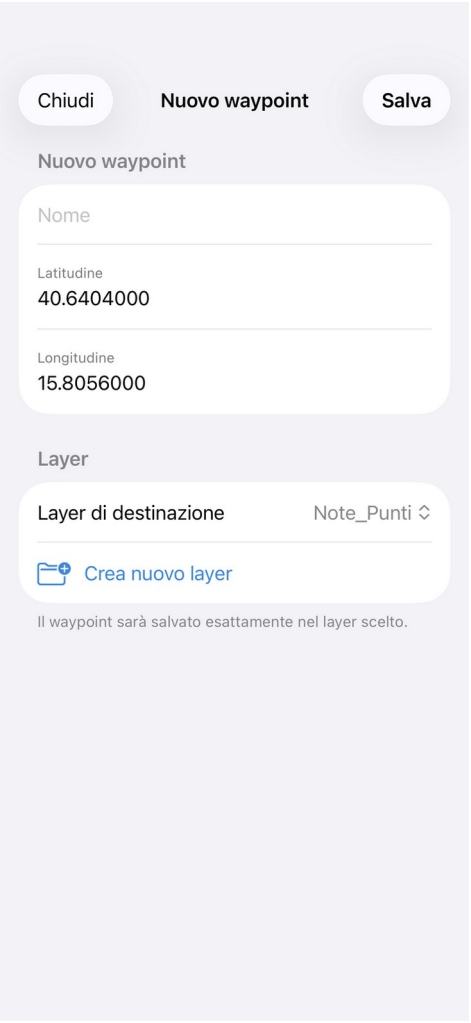
A Waypoints and toolbar customisation

The selected layer determines where the waypoint is stored. Toolbar layout changes the interface rather than point geometry or attributes.



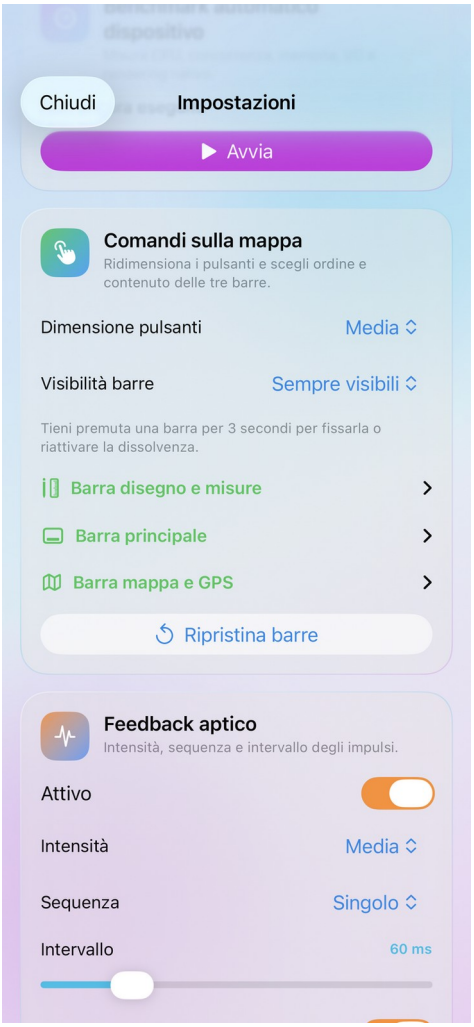


Figure A5. Insertion form with destination selection. Use a compatible layer or create a new one. See chapter 05.

Figure A6. Map toolbar preferences for size, visibility and command arrangement. See chapters 03 and 22.

Historical Italian-interface simulator captures, 24 September 2026. Text size and preferences affect how much is visible without removing options.

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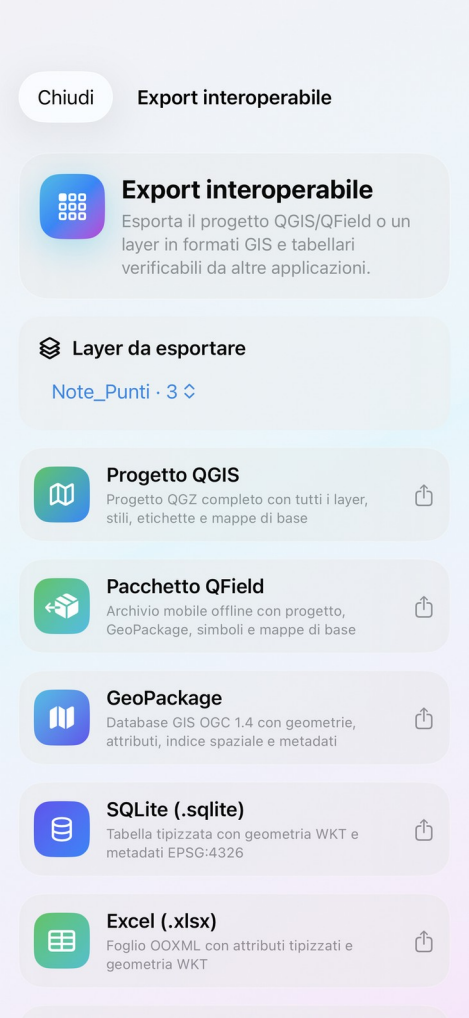
A Excel and CSV export

Open **Export project → Interoperable export**. Select the layer and scroll to the format. Chapter 18 explains content, coordinates, cancellation and table reopening.



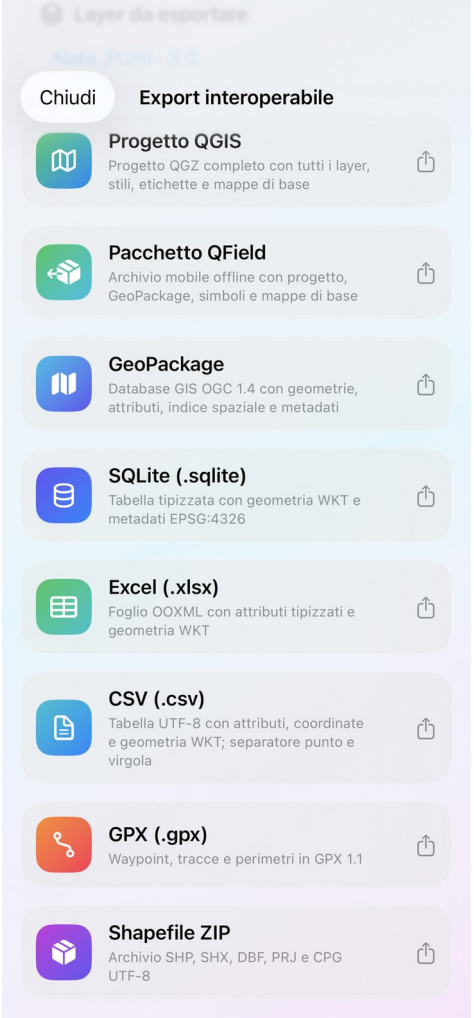


Figure A7. Top of the export panel with the demonstration layer selection. Table formats export the selected layer.

Figure A8. Excel XLSX and CSV appear farther down the same panel. The app prepares a file, then offers iOS destinations.

Historical Italian-interface simulator captures, 24 September 2026. They show format selection rather than measure export time on a large phone project.

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B Troubleshoot maps and data

A waypoint cannot be found

Check the open project, destination layer, visibility, filters and clustering. Search the layer table. If the row exists, inspect coordinates and framing before creating another point and risking duplication.

An attachment shows only a path

Try opening from details. Check local file presence or URL reachability and permissions. Prefer one URL per line. A computer path is different from content embedded in a package.

Import is ignored or a session is invalid

Read the summary and identify the reported file. Check internal format and package structure. Generic JSON cannot be made into a project by renaming. ZIPs are not necessarily sessions. Include raster companions and use dedicated LAS import.

A raster is missing or displaced

Check visibility, extent, metadata, world file and CRS. A readable image need not be georeferenced. Obtain an unknown EPSG from the provider or inspect it in GIS rather than guessing.

WMS is blank or reports an exception

Check coverage, zoom, selected layers, shared CRS, style, required time/elevation and authentication. Test a known published area. Retain a redacted error and layer name for support.

A sensor fails or its chart is empty

Test endpoint, network, HTTP method, authentication and mapping. A private Wi-Fi IP is normally unreachable over cellular. Check history activation, numeric field, period and successful readings. Refreshing a graph is not necessarily a server query.

Many features cause slowdowns

Reduce visible layers, labels and photos; use clusters and stop unnecessary tasks. Note feature type/count and the precise trigger if the issue persists. Preserve data before cleanup or reinstallation.

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B Troubleshoot surveys and services

Fusion lacks photographs or detail

Check gallery, calibration, mesh and current revision, then try reloading fusion. Missing capture needs new coverage; higher graphics quality cannot invent surfaces or photographs.

Bounds are missing

Check recognised objects rather than only surface classes. Enable objects in viewer layers. An external LAS with classes need not contain native bounds.

ICP is rejected or produces doubled surfaces

Check the chosen family, real overlap and initial reference. Compare several details rather than one wall. Keep quality checks enabled and use matching photographs and mesh.

AR camera or scanning is unavailable

Check compatibility, camera access and iOS thermal state. System thermal assessment may differ from how cool the phone feels. Stop heavy tasks, allow stabilisation and retry when permitted.

LiDAR or RoomPlan closes unexpectedly

Reopen and inspect saved data. Copy partial and original files before deletion. Record time, duration, phase and conditions, then collect diagnostics. Relaunch does not prove a complete last capture.

A subscription change seems unapplied

Compare active and scheduled plans, check account and Apple management, then refresh or restore purchases. Avoid repeated purchases. Report error codes and times.

CarPlay does not open or speech is too fast

While parked, open FieldCore on the display and check project/session. Open manually if automatic activation is denied. Choose **Voice guidance** → **Slow** and listen to a sample. Waypoint radius does not change turn-announcement timing.

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B Troubleshoot sessions and LAS tags

A session will not import

For **Invalid serialised session**, use **Import session file** with the complete package. Extracted manifest JSON is not necessarily standalone. Download incomplete packages again and check passwords.

For an **unsafe path** error, retain the archive and message for generator/importer review. Do not disable app checks or rename individual internal files. Check for a corrected package or app update.

A map label is absent from the LAS view

Check the LAS-tag count and **Sensor and waypoint labels**. Temporarily disable **Selected feature only**. Add a missing 3D anchor on the cloud and save. If only LAS was transferred, also import the session metadata.

A tag looks suspended or displaced

Rotate and inspect the leader’s anchor. Check origin, axes, elevation and revision. Labels may move on screen for readability while anchors stay fixed. If the anchor is wrong, correct it without blindly moving the geographic waypoint.

Tapping approaches but does not open data

Use **Open selected LAS-tag details**, or long-press three seconds and choose **Open details**. Check video type and URL. Use external opening if embedding is restricted.

A dashboard is empty or stale

Check sensor activation, address, authentication, mapping and connection test. Read timestamp and state: retained data are not live readings. After changing the sensor URL, test its configuration again.

For support, include version/build, package name, action and message, plus a credential-free screenshot. Keep the original project.

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B Troubleshoot 3D buildings

Search finds a place but no volumes appear

Select the result, choose radius or rectangle and tap **Load buildings in area**. Check completion, saving and source coverage. An empty view may reflect missing data rather than viewer failure.

A saved municipality has no footprints on other maps

Enable its 3D buildings level in **Layers**. Check opacity, fill and hidden categories. Frame an acquired area and allow footprint loading. Older versions may need updating; keep valid archives rather than unnecessarily downloading them again.

Footprints or points overlap

Check for multiple visible acquisitions of the same area. Back up, identify unnecessary downloads by name and remove them. Random CRS changes do not fix duplicate data.

The scene updates slowly or the service fails

Watch preparation, progress and completed sectors. For temporary errors follow pause/resume guidance. Reduce extent before retrying rather than repeatedly starting the same download. Acquired sectors remain usable in a partial archive.

Terrain is incomplete or a photograph is on the wrong wall

Distinguish base imagery, terrain and volumes in Layers. Read missing-resource and conventional-elevation indicators. For facade images, verify wall selection, orientation and saving.

GPS does not reach the expected area

Check precise location, accuracy and saved buildings nearby. Indoors or among tall buildings, wait for a better fix or navigate manually. Report version, area, map type and steps without credentials or personal data.

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C Glossary and completion checks

Term	Working meaning
Layer	Organises similar data and controls visibility
Waypoint	Geolocated point with attributes and optional attachments
Cluster	Visual grouping of nearby on-screen points
CRS and EPSG	Coordinate system and a code identifying many systems
Raster	Georeferenced image, distinct from vector geometry
WMS and XYZ	Different methods for online mapping imagery
Endpoint and mapping	Service address and assignment of returned values to display fields
LAS and mesh	Point cloud and a surface made of faces
LAS-tag and 3D tag	Cloud anchor linked to information, sensors or media
SMAB	MAb FieldCore session extension with packaged content
Texture	Surface image; does not supply missing geometry
ICP	Geometric alignment through overlapping cloud correspondences
Bounds	Estimated object extent rather than actual volume
AR	Digital content overlaid on the camera view
Footprint and volume	Plan contour and a height-based 3D representation
Orthophoto and terrain	Georeferenced imagery and an elevation model, separate resources
Estimated height	Value inferred indirectly or supplied by a default
GCP and checkpoint	Measured control and an independent verification point

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C Completion checklist

Check before closing or delivering work. A tested project copy supports recovery and comparison of revisions without changing originals.

Before closing a job

- I checked project, layer and position of new features.
- I saved edits and revisions and reopened key content.
- I tested attachments and distinguished local files from remote links.
- I stated CRS, units, capture date and delivery limits.
- For buildings, I checked height quality, acquired sectors and saved photographs.
- I created and tested a backup and understand its exclusions.
- I stopped recordings and unused local services.

Before the next visit

Check battery, storage, permissions, plan and offline data. Test GPS or scanning before a long job. Check sensor connectivity and reading age. Set CarPlay voice, layers and alerts before departure.

Follow chapter 22 for support. Retain originals until the work is verified.

Share a checked copy

Open an attachment and compare a map element with its record or cloud position. For buildings, inspect an estimated-height example and ensure its quality remains identifiable in delivered files. For sensors, distinguish current and retained readings.

Use a copy for support or analysis tools and remove credentials, personal data and confidential references. Preserve app version and document revision. This edition is **MFC-MAN-EN-20261117**.

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