Trabajos de Campo

Public overview of a mobile application built for Junta de Andalucia personnel who perform field work outside the office.

The app is conceived as an operational companion for inspections, visits and evidence capture in the field. It combines visit planning, document handling, configurable forms, checklist execution, geolocation capabilities and local data persistence, while avoiding any exposure of source code in this document.

Android oriented field workflow	Offline-ready local persistence	Evidence, forms and checklists in one app

Unified field-work interface

The visit view concentrates checklist status, prior information, collected evidence and quick actions.

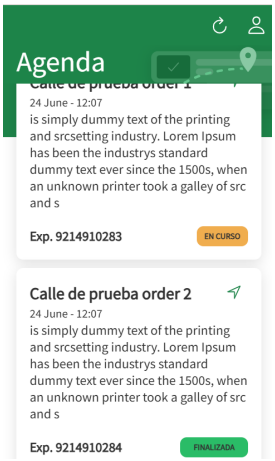
All descriptions below are derived from the implemented behaviour and architecture of the application. No code excerpts are included.

What the app does

Trabajos de Campo revolves around the visit as the main operational object. Workers can review the agenda, open a visit, inspect its context, add evidence, complete forms and continue working when connectivity is limited.

Operational flow

1. Access the application and re-enter through a secondary PIN layer when required.
2. Review scheduled visits from the agenda or create a new visit entry.
3. Open a visit to see context, file number, notes and previous material.
4. Launch actions such as documentation, QR verification, forms and observations.
5. Preserve work locally and synchronize when the field session requires it.

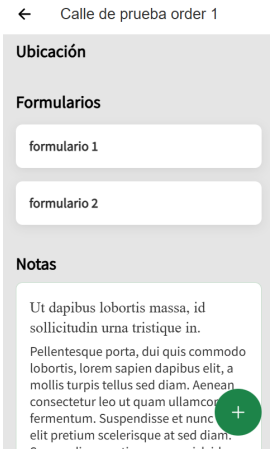


Agenda and visit queue

Scheduled visits are presented as mobile cards with status and quick access.

New visit creation

The interface supports adding a visit directly from the mobile workflow.



Visit overview

A visit groups location, forms, notes and contextual information in a single screen.

Extended visit context

Detailed visit information can be reviewed before the worker starts collecting data.

Field evidence and documentation

Evidence collection is embedded inside the visit workflow. From the same mobile context, the worker can review prior material, register physical documents, annotate images, scan verification codes and capture observations.

Functional highlights

- Review previous information and collected attachments linked to the visit.

- Open an action hub to register physical documentation, take or edit photographs, scan codes, open forms and add observations.

- Capture document photos with the device camera and keep them attached to the ongoing visit.

- Use the integrated image editor to annotate or adjust evidence before saving it.

Prior information and attachments

Previous documents and media can be consulted from the visit before new work is added.

Visit action hub

The add-action panel centralizes the operational tools available to the worker.

Physical document registration

A dedicated screen captures document name, description and supporting photo.

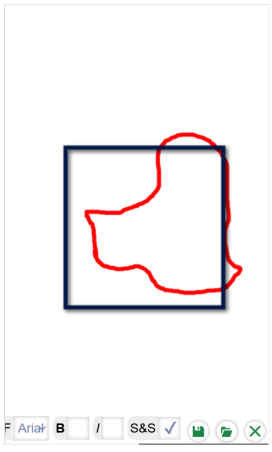


Image editing workflow

Captured or loaded images can be edited before being stored as evidence.

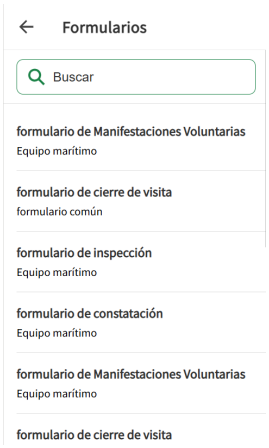
The implemented code also includes QR-based document verification, filesystem storage, PDF export from forms, and support for attaching metadata to saved image files.

Forms, checklists and traceability

The app standardizes field data entry through reusable digital forms and on-site checklist execution. This makes capture more consistent, easier to audit and better suited to repeated work across teams or visit types.

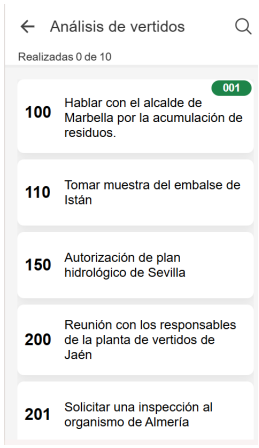
Why this matters

- Forms are structured as configurable pages, rows, fields and validation rules instead of one-off screens.
- The checklist module supports search, progress tracking and item-by-item completion with comments.
- Different answer models are available, including Yes/No/Not applicable and multi-level scoring.
- Signature capture and PDF generation are built into the wider form workflow.



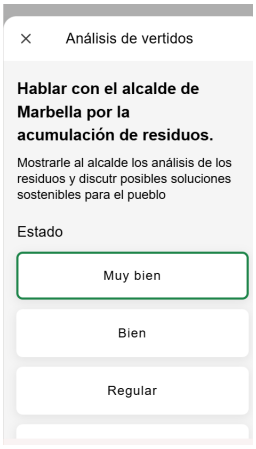
Form catalogue

Workers can select the required digital form from a searchable list.



Checklist execution

The checklist screen shows outstanding tasks and live completion progress.



Multi-level assessment

Some checklist items use a graded evaluation model with free-text notes.

Binary assessment

Other checklist items use a direct Yes/No/Not applicable decision model.

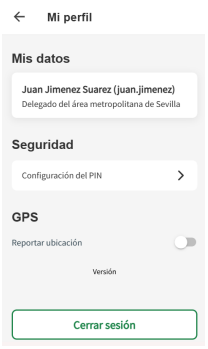
In the implemented architecture, checklist answers, visit data, forms, locations and related structures are persisted locally so that work can continue in the field and be synchronized later.

Security, offline readiness and technology stack

Because the app is intended for work away from the office, device behaviour and local resilience are central to the design. The codebase combines mobile-native integrations with a structured local data model so that the user experience remains practical in field conditions.

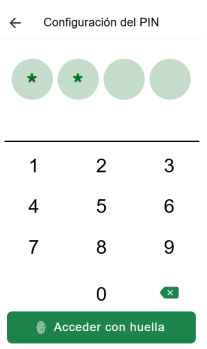
Synchronization state

The interface includes a dedicated synchronization entry point for field sessions.



Profile and device settings

The profile area exposes session actions, GPS reporting and version visibility.



Secondary PIN layer

The application reinforces access with a mobile PIN screen and biometric hooks.

Important technical characteristics

- Android-first mobile architecture built with Ionic and Capacitor.

- Portrait workflow with local SQLite persistence for visits, checklists, forms, locations and coordinates.

- Manual synchronization entry point for offline-oriented field work.

- Geolocation support plus a dedicated tracking plugin for device reporting.

- Mapping module integrated with Junta de Andalucia Mapea and OpenLayers services.

- Native access to camera, filesystem, QR or barcode reading, PDF generation, screen-awake control and Android permissions.

- Integrated image annotation and metadata-ready file handling.

- Session flow with login, local storage token handling and a second PIN gate.

Technologies used

- Angular 13 and Ionic 6 for the application UI and navigation model.

- TypeScript, HTML and SCSS for screens, behaviour and styling.

- Capacitor 3 as the native bridge to Android device capabilities.

- Cordova and Awesome Cordova Plugins for SQLite, orientation, versioning, file opening, insomnia and permissions.

- cordova-sqlite-storage for local persistence.

- Camera, Geolocation and Filesystem Capacitor APIs.

- Painterro plus EXIF-related libraries for image editing and metadata workflows.

- PDF Generator and File Opener for document creation and viewing.

- Mapea 6.1 and OpenLayers for maps and geometry management.

- A custom trackinggeolocation plugin for GPS reporting scenarios.