Introduction

Description

Open Tenure is a mobile application that supports community based mapping and recording activities, allowing capturing details of land parcels, owners/tenants information and their rights to those parcels. It is open source, developed by UN Food and Agriculture Organization and distributed free under a "Modified BSD License";

Open Tenure should always work in conjunction with SOLA Community Server, which is a Web-application, used for uploading and processing collected claims. SOLA Community Server also provides initial configuration settings for Open Tenure application (see more details in SOLA Community Server Quick Reference Guide).

Key features

- Fully open source, based on the best practices and well-known platforms and tools;
- Multilingual – supports 10 languages (English, Arabic, French, Italian, Spanish, Khmer, Russian, Portuguese, Albanian, Vietnamese);
- Works online and offline;
- Can use Google maps and WMTS layers (including offline mode);
- Supports local database encryption;
- Works over slow and unreliable Internet connection;
- Supports dynamic forms handling – additional fields configured by the user[1];
- Has a tutorial component for guiding users how to use the application;
- Allows capturing land-related claims and submit them for further processing;
- Allows capturing disputing claims, challenging existing ones;
- Allows capturing additional land features (e.g. big tree, building, rock, etc.);
- Allows import and export of collected claims in the form of archive, protected by the password;
- Allows capturing community area boundaries (e.g. village boundary) and use this information further, when recording a claim;
- Auto saves claim details, preventing from losing information;
- Supports capturing evidences in the form of documents, attached to the claim;
- Allows adding and submitting additional documents for the claims already submitted;
- Implements reliable and convenient mapping tools, allowing administrative or parcel boundary capturing and their accurate editing;
- Supports boundary points snapping and automatic geometry validation;
- Allows downloading claims, captured by other recorders;

Requirements

Prerequisites

[1] Dynamic forms configuration should be made on the SOLA Community Server.

Open Tenure application works tightly with **SOLA Community Server**. It receives configuration parameters and existing claims from SOLA Community Server and sends captured claims to it. Therefore, SOLA Community Server must be running on a server, accessible to Open Tenure application. It could be a local server or hosted on the Internet.

Minimum requirements for mobile device

- Android 4.4
- 1 GB memory
- 2 GB of disk
- Rear Camera
- GPS sensor
- Compass sensors

Preparation

Installation

Installation of Open Tenure is a straightforward process. You can search it in Google Play Store or install from APK file, provided by your administrator.

Overview

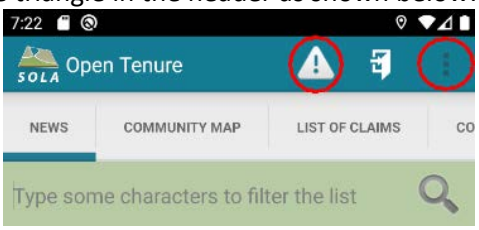
The main screen of Open Tenure application contains the following tabs:

Tab	Description	Toolbar and menu
NEWS	List of news from Open Tenure community	 Log in  Encrypt local database › Settings › View Tutorial › Export Log
COMMUNITY MAP	Shows the map with claims, zoomed to Community Area	 Zoom to Community Area  Zoom to current location (based on GPS data)  Download claims from Community Server  Download imagery (when zoom in closely) › Settings › View Tutorial › Export Log › Log in › Google Maps › Google Hybrid › Google Earth › Google Terrain › Open Street Map MapNik › Open Street Map MapQuest › Local data (downloaded imagery) › GeoServer (WMS layer)
LIST OF CLAIMS	Contains list of captured or downloaded claims	 Import a claim from the file, exported on other device

		Create new claim › Settings › View Tutorial › Export Log › Log in › Backup local data › Show deleted
COMMUNITY AREAS	Contains list of captured or downloaded community areas	Create new community area Download community areas › Settings › View Tutorial › Export Log › Log in

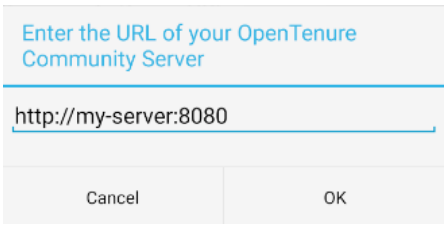
Initialization

Once application is installed and running, you will see first a tutorial, guiding through the main application features. You can go through it or skip. To start using the application it has to be initialized from SOLA Community Server. Uninitialized application has a white triangle in the header as shown below.



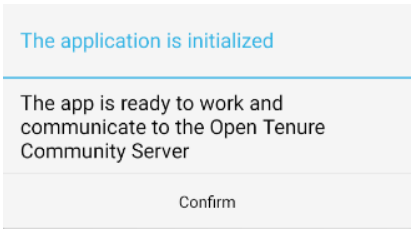
By default, Open Tenure is configured to communicate with SOLA Community Server at https://demo.opentenure.org. This demo server might be down and you have to use your server in case of establishing a new project or doing local testing. For changing this setting, tap on the menu options icon (triple vertical dots) and select **Settings** option.

Settings page can be used to configure various settings like map sources, language, dynamic forms and others. For configuring SOLA Community Server URL, tap on it and enter your address as shown below. Make sure to add port number if your server is using non-standard HTTP port (e.g. http://my-server.org:8080).



Once correct address is entered and saved, you can go back to the main screen by clicking back navigation button of your device.

Now you are ready to initialize Open Tenure. Tap on the white triangle icon to start the process. It will pull required configuration for capturing new claims and upon successful completion, display readiness message.



Claims

New claim

Start creating new claims by switching to the **LIST OF CLAIMS** tab and tapping **New Claim** icon. You will be asked to confirm creation of a new claim and upon confirmation claim form will be opened. For the first time, a tutorial will be displayed, guiding you through the main steps of creating a new claim. You can go though it or skip.

Claim form consist of the following tabs:

Tab	Description	Toolbar and menu
CLAIM	General information about the claim and claimant	Validate claim form for any issue Generate PDF from this claim › View Tutorial
OWNERS	List of ownership shares	Add new share
DOCUMENTS	List of attached documents	Add new document
ADJACENCIES	Description of neighboring adjacencies from four side and list of neighboring claims, detected automatically	
MAP	Map component for drawing parcel boundaries	Add a point from GPS Make a map snapshot and attach it as a document Open map mode menu › Rotate map using device compass › Go to › Google Maps › Google Hybrid › Google Earth › Google Terrain › Open Street Map MapNik › Open Street Map MapQuest › Local data (downloaded imagery) › GeoServer (WMS layer) › Export geographic data

CHALLENGES	Automatic list of disputing claims, challenging this claim	
OTHER TABS	Additional tabs can appear as well, if they are configured through dynamic forms feature of SOLA Community Server	

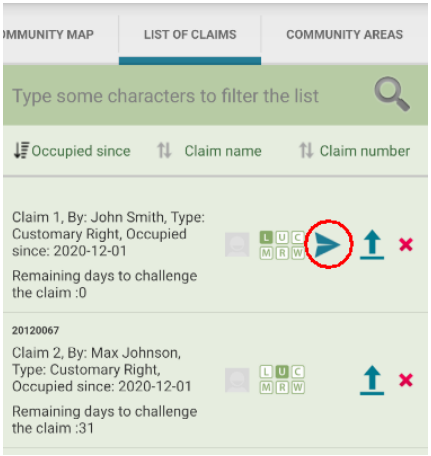
Start with the **CLAIM** tab and provide general information. At the bottom of this tab, tap **Add Claimant** button to add claimant information. Once the claimant is added, ownership information will be automatically created as well. You can observe and adjust it on the **OWNERS** tab.

Continue to the other tabs and capture required information. While mapping parcel boundary use **Add GPS point** icon to create a point at your current position, or use long click on the map to add it manually.

Once you are done with attributes and parcel boundary, go back to the **CLAIM** tab and tap **Validate** icon to check if all rules and requirements are met. This is optional step and you can leave the form even if something is missing and come back to it later.

Submitting claims

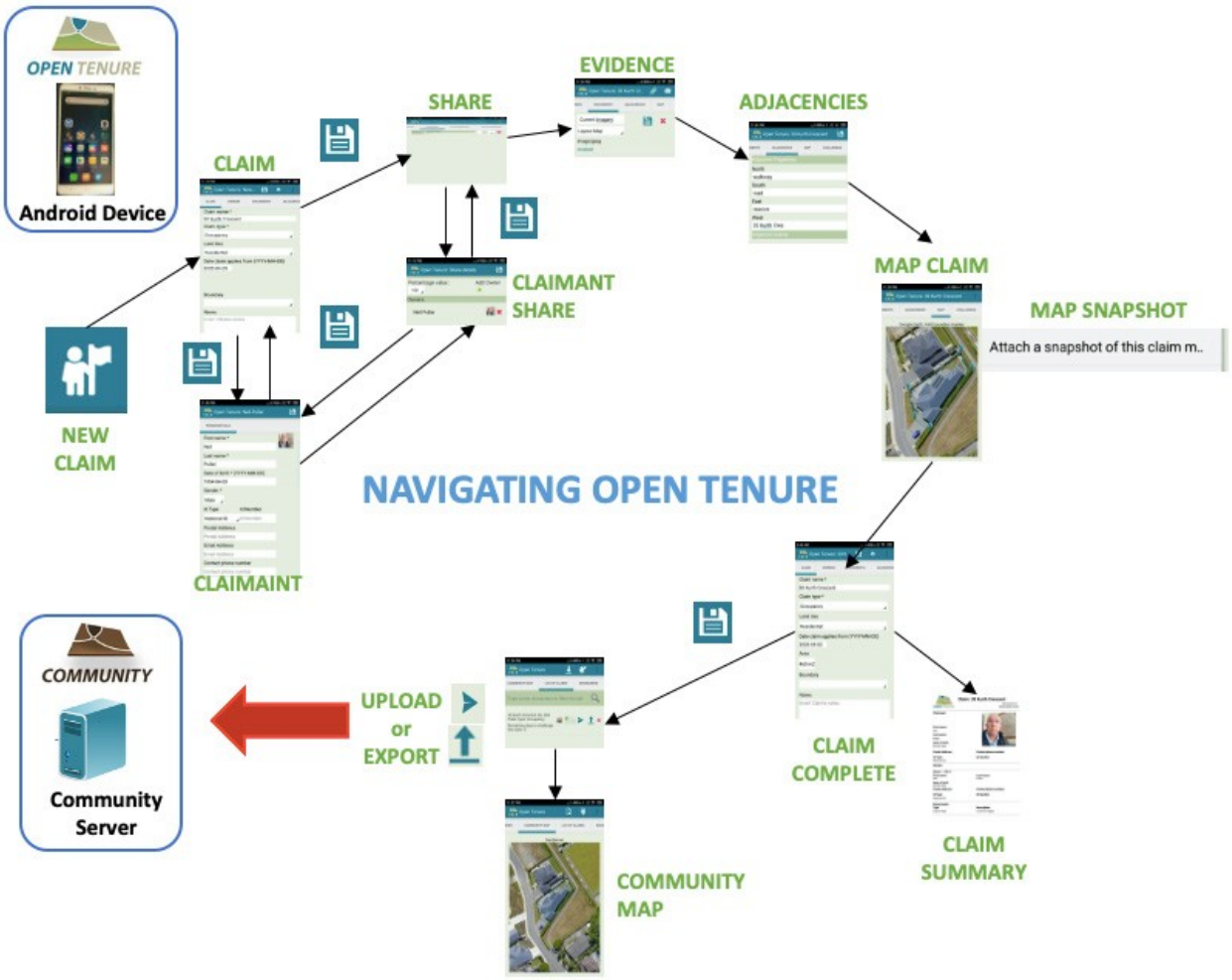
Claim submission is done from the **LIST OF CLAIMS** tab of the main screen. Depending on the claim's status, it will have different buttons available next to it. The image below shows **Claim 1** available for submission and **Claim 2** already submitted. Claim 2 has claim number assigned by the server (#20120067).



Click **Submit** icon (paper plane) next to the claim to initiate its submission. Before submitting a claim you will have to login and if you are not, appropriate message will be displayed. If you are logged in, the application will run claim validation again to make sure all is correct. If any issues found, submission will be stopped and an error message displayed. Otherwise, upon successful submission, the claim will be assigned a unique claim number and become available on the server for public display and further processing.

Submitted or downloaded claims can be deleted only locally, but not from the server. Not submitted claims can be deleted permanently.

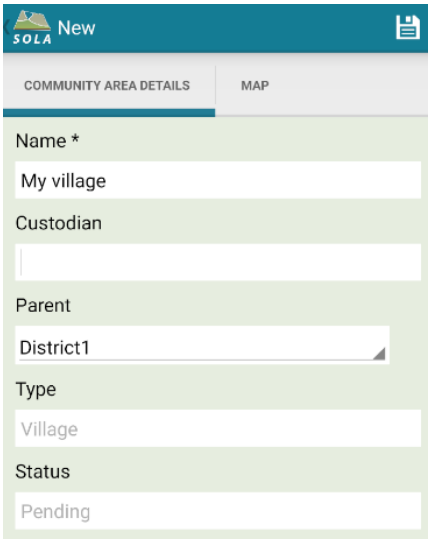
Navigating


OPEN TENURE
Android Device
NEW CLAIM
CLAIM
CLAIMAINT
SHARE
CLAIMANT SHARE
EVIDENCE
ADJACENCIES
MAP CLAIM
MAP SNAPSHOT
Attach a snapshot of this claim m..
NAVIGATING OPEN TENURE
CLAIM COMPLETE
CLAIM SUMMARY
COMMUNITY MAP
UPLOAD or EXPORT
COMMUNITY
Community Server

Community Areas

New area

Apart from capturing claims, Open Tenure allows mapping of various community areas, like village boundaries. Start creating new community area by switching to COMMUNITY AREAS tab on the main screen and tapping **Create new community area** icon. It will take you to the simple form as shown below.

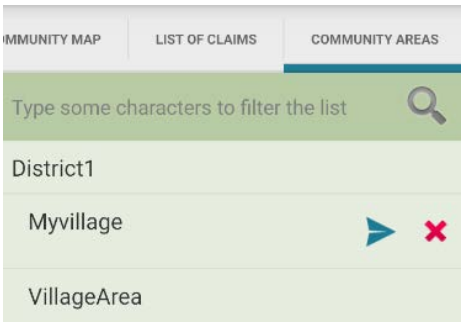


The minimum required attribute here community area name. Additionally you can provide Custodian information and select parent area (e.g. district name).

Next step is switching to the **MAP** tab and drawing community area boundary in a similar way as with capturing claim boundary. You can add new points by selecting menu option "**Add marker from GPS**" or do it manually by long pressing on the map.

Submitting area

Once community area attributes and its boundary are captured, tap **Save** icon on the **COMMUNITY AREA DETAIL** tab or select it from the menu options on the **MAP** tab. Newly created community areas will have submit and delete buttons next to it.



Tap **Submit** button to send community area to SOLA Community Server, where it will be further reviewed and processed.