SOFTWARE
OPERATIONS MANUAL

WISPr CLOUD

User Manual v1.0

September 12, 2019

Notice

All instructions and documents are subject to change at the sole discretion of Autonomous Industrial Solutions. For up to date product information, visit www.wisprsystems.com and go to the support page

⚠ **WARNING**   Read the entire user manual to become familiar with the operation and features of this product before use. Failure to operate the product as directed can result in damage to the product, cause damage to personal property and cause serious injury. This is a sophisticated and technical product. It must be operated with caution and good judgement and requires some basic mechanical aptitude. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children or persons under the age of 18. Be sure to only use genuine WISPr Systems components. Do not alter this product in any way outside of the documents provided by WISPr Systems. These safety guidelines contain instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the user manual, prior to assembly, setup or use, in order to operate the product correctly and avoid damage or serious injury.

Pre-Flight Checklist:

Ensure that you have your FAA Part 107 License
Be familiar with FAA Part 107 rules and regulations
Ensure your aircraft is registered with the FAA
Ensure weather conditions are suitable for flight
Ensure that you are NOT under the influence of alcohol, drugs, or any medications that could impair your abilities to operate the UAV safely
Ensure that you are using only genuine WISPr Systems parts and that all the parts are free from damage or broken components.
Ensure the Remote, Battery, and mobile devices are fully charged
Ensure propellers are mounted correctly and confirm the propeller attachment is secured to the motor attachment.
Ensure you are flying OUTSIDE of restricted areas and No Fly Zones
Ensure that you are operating within local and federal laws and regulations
Ensure that you have obtained any appropriate authorizations
Be aware of your surroundings and understand the risks associated with operating UAV
Be familiar with the WISPr Systems User Manual

Safety Regulations

General

DO NOT store the WISPr System's drones near any electromagnetic or magnetic fields, heavy machinery, large electric motors, high voltage sources, server rooms, sound equipment, laptops, batteries, or any other sources of interference.

You should not be under the influence of drugs, alcohol, or any medications that could impair your ability to operate the UAV safely.

Never use the WISPr System's drones for illegal operations.

Always have a flight plan.

DO NOT fly near or within a no-fly zone.

DO NOT fly above authorized altitude.

DO NOT fly aircraft out of your line of site.

Maintain contact with controller for entire flight.

Become familiar with operating drone and its controls before using the WISPr System's drones.

Never fly near or interfere with manned aircraft operations.

Always follow local and federal regulations.

Please Read entire user manual to become familiar with the features of this product before operating.

Failure to operate the product correctly and responsibly can result in damage to the product or personal property and cause serious injury.

The WISPr System's drones must be operated with caution and common sense and requires some basic mechanical ability.

This product is not intended for use by children and should never be used near children or pets/animals.

DO NOT alter product in any way.

Use only provided genuine WISPr Systems products.

Read manual prior to assembly and/or use.

The WISPr Systems' drones is not a toy and should only be used for it's specified purpose.

Manual Use:

Tips   Warning   Important

Read Before Use:

Unpacking the WISPr Pogo
WISPr Pogo Operational Manual
FAA Regulations - https://www.faa.gov/uas/commercial_operators/become_a_drone_pilot/

Watch Before Use:

All the following videos can be found at: https://wisprsystems.com/support/

Calibrating the WISPr Pogo
Initial Setup/Breakdown
GPS LED Description
Hand Controls and Keyboard Controls
Connecting WISPr OS to CPE
Takeoff, Landing, and In-Flight Controls (Surveying)
Reviewing Logs, Updating, and Uploading Survey Logs
Return to Launch/Geofence Failsafe Settings

Contents

WISPr CLOUD

The WISPr CLOUD is a CLOUD service hosted by WISPr Systems. It is used to configure and store tower coordinates and pre-configured automated tests. These towers and tests are downloaded to the WISPr OS and used during flight. After a flight is finished, flight logs and pictures captured during flight can be uploaded to the CLOUD to be viewed at any time. Other features on the WISPr CLOUD include adding other users, adding subscribers that are linked to towers, pre-configured tests, and logs, and purchasing the WISPr OS subscription for your WISPr Pogo.

To access the WISPr CLOUD, open an internet browser and go to the web address, cloud.wispr.systems. Once the WISPr CLOUD has loaded, click "Login"

Login to the WISPr CLOUD using the account email and password used to create your WISPr CLOUD account.

Dashboard
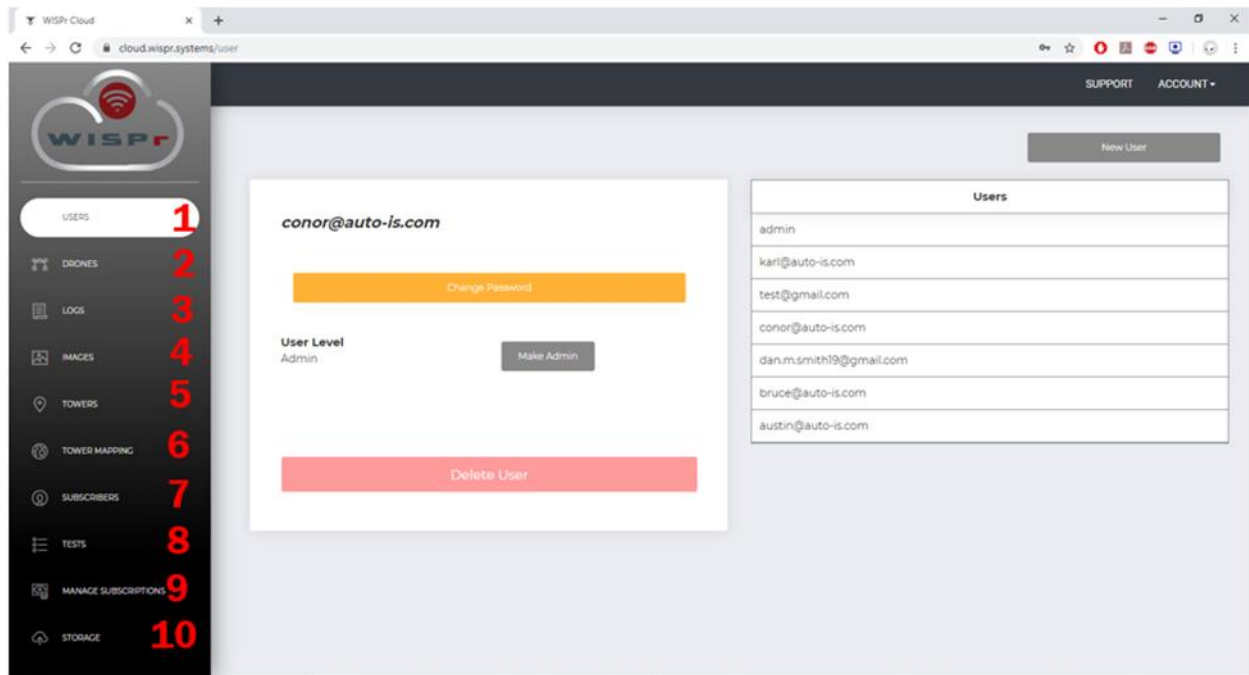
Menu list:

1. Users
2. Drones
3. Logs
4. Images
5. Towers
6. Tower Mapping
7. Subscribers
8. Tests
9. Manage subscriptions
10. Storage

USERS

The "USERS" tab is used to add new users, delete users, make admins and change your password.
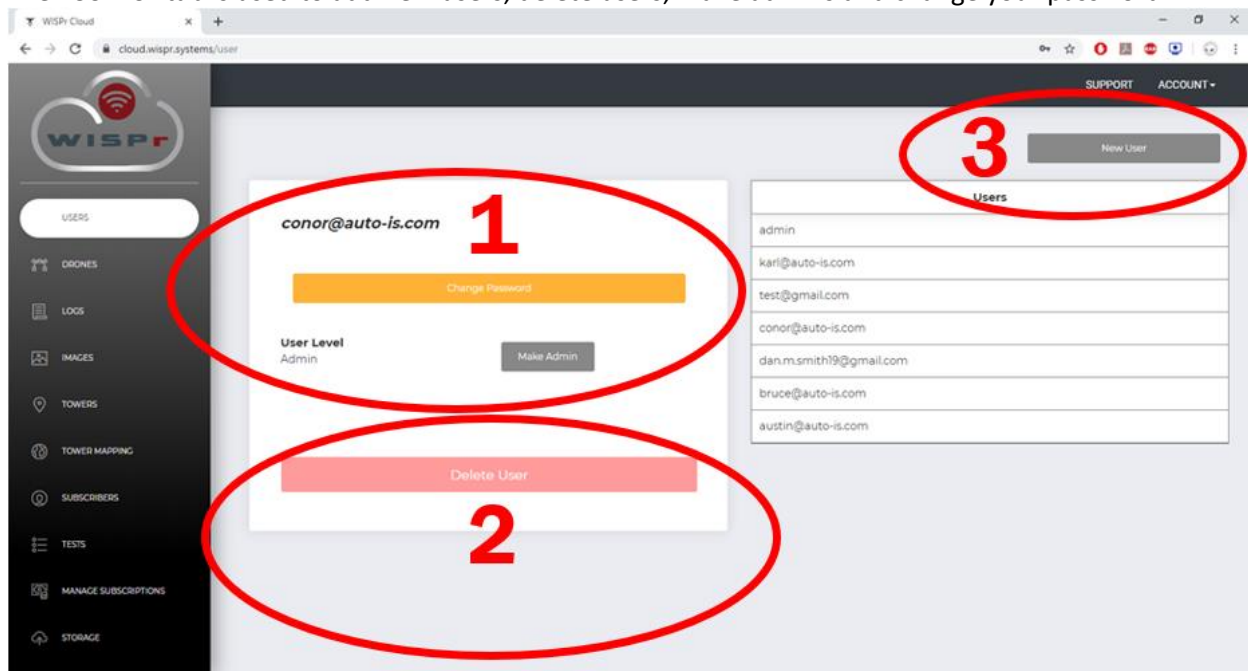
Options:
1. Change password and/or make admin
2. Delete User
3. Create New User

CHANGE PASSWORD AND/OR MAKE ADMIN

To change your password, you have to be logged in under your account. If you have forgotten your password, please use the Forgot Password button on the Login page. Once logged in, go to the "USERS" page using the side menu. Once on the "USERS" page, click change password. Enter your new password and confirm your password, then click submit.

To promote another user to admin, select that user and click the "Make Admin" button.

****You must be an admin to promote another user to admin.****

conor@auto-is.com

Change Password

User Level
Not Admin

Make Admin

DELETE USER

Users with admin privileges cannot be deleted. To delete a non-admin, select the user from the user list and click the red "Delete User" button.

test@gmail.com

Change Password

User Level
Not Admin

Make Admin

Delete User

Users
admin
karl@auto-is.com
test@gmail.com
conor@auto-is.com
dan.m.smith19@gmail.com
bruce@auto-is.com
austin@auto-is.com
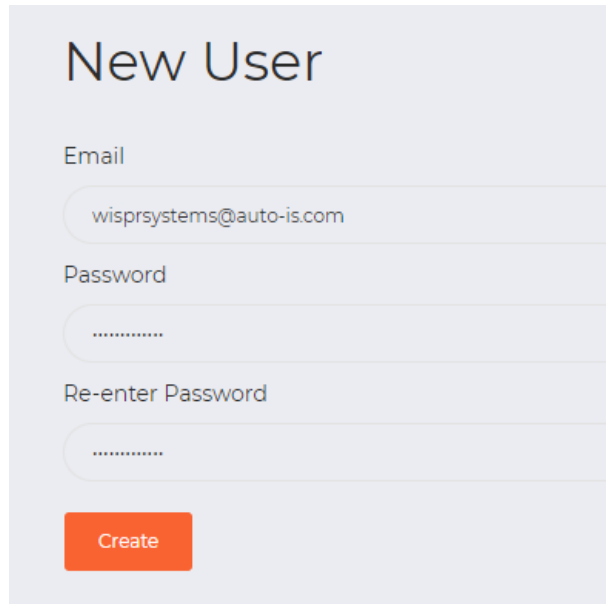
CREATE NEW USER

To create a new user, click the "New User" button

New User

Users
admin
karl@auto-is.com
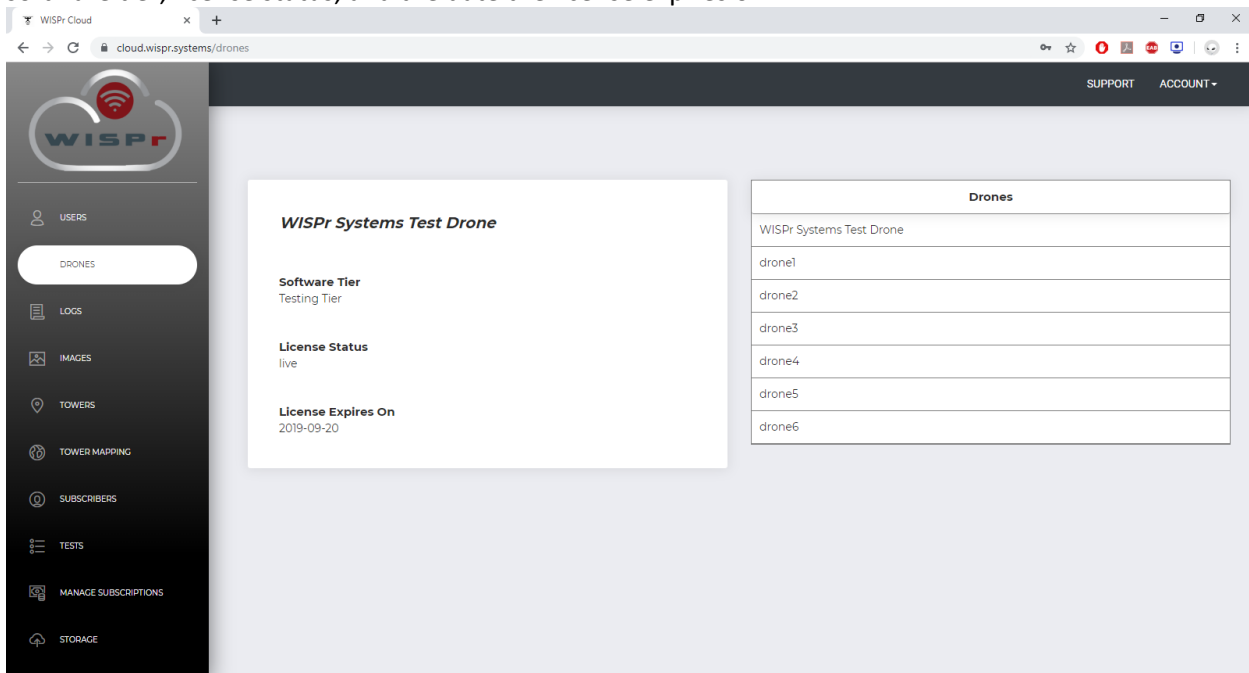
Enter the email of the new user you would like to create. Then enter a password for the user, then re-enter the password for the user and click "create".

DRONES

The "DRONES" page lists all the drones connected to your account. Click on a drone to show the software tier, license status, and the date the license expires on.

LOGS

Flight logs uploaded from the WISPr OS will appear in the "LOGS" section of the WISPr CLOUD

You can search by subscriber name or by flight log name. You may also sort by log name, subscriber name, and date.

Click "VIEW FULL LOG" to open a log. The date and time of the survey will appear in the top right. Change between automated tests by clicking on the tabs at the top of the log.

Below is a "New Tower Survey" flight log.
- Hover over points on the graph to see the data for that particular point.
- Best Signal Recorded is above the picture
- The picture is a snapshot taken at the best signal point.
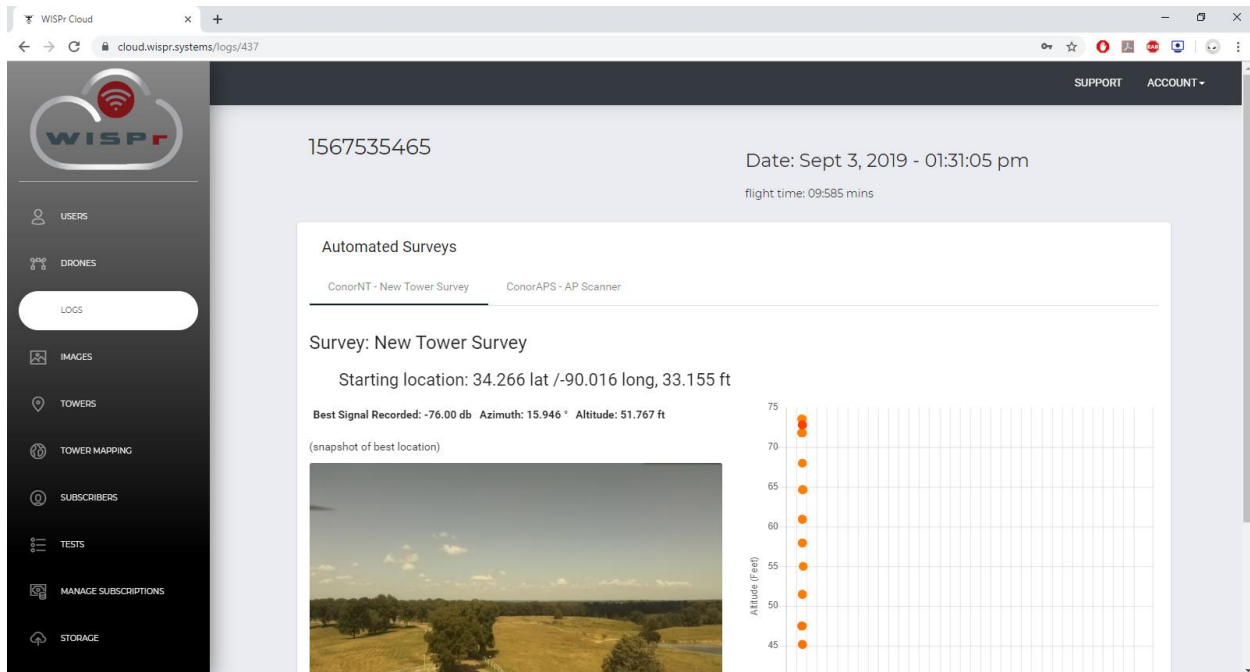
Below is an example of the AP Scanner flight log.

- List the SSID of the access points found
- Signal strength
- SNR (Cambium) or Capacity (Ubiquiti)
- Azimuth
- Altitude

1567535465

Date: Sept 3, 2019 - 01:31:05 pm

flight time: 09:585 mins

Automated Surveys

ConorNT - New Tower Survey   ConorAPS - AP Scanner

Latitude: 34.2662338   Longitude: -90.0155469

SSID	Signal Strength (db)	SNR (db)	Azimuth (°)	Altitude (ft)
WISPR_AP_0	-87	10	231	119
WISPR_AP_0	-87	10	334	122
WISPR_AP_0	-87	10	50	119
WISPR_AP_0	-87	10	16	119

IMAGES

Pictures uploaded from the WISPr OS will contain metadata which is stored with each picture taken. The altitude, azimuth, latitude and longitude are stored with each picture taken.
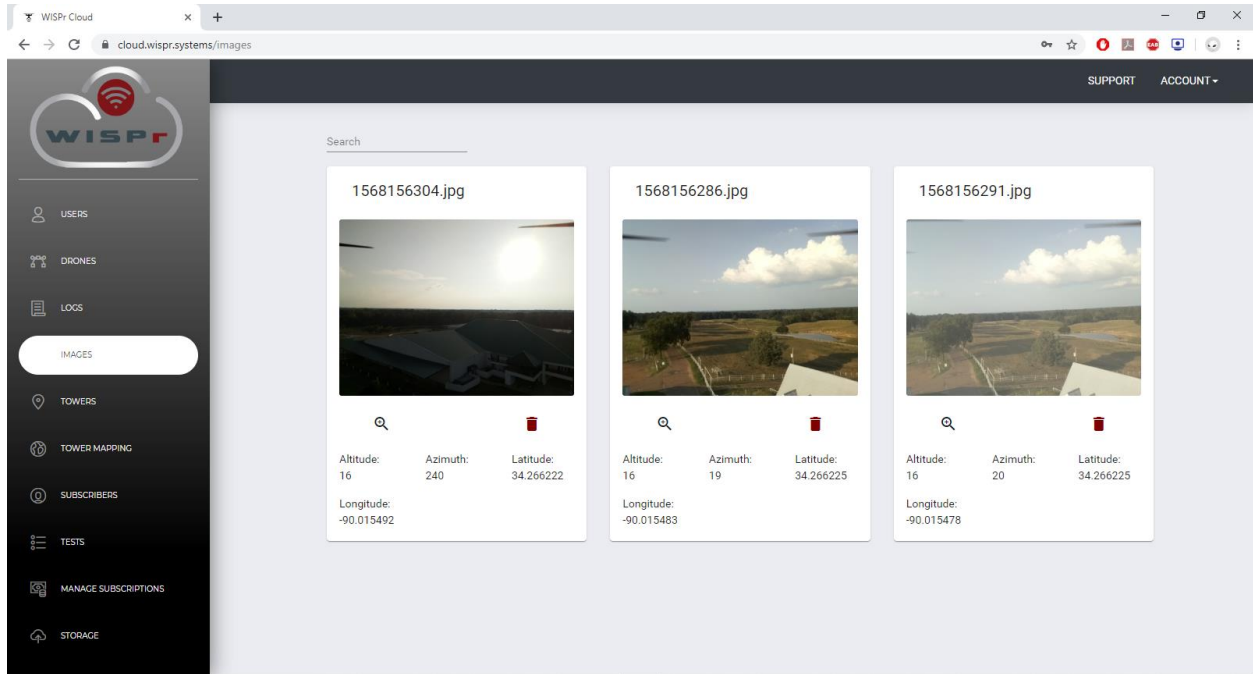
Click picture to enlarge the photo and to exit that view click the 'x' button above the top right of the picture.
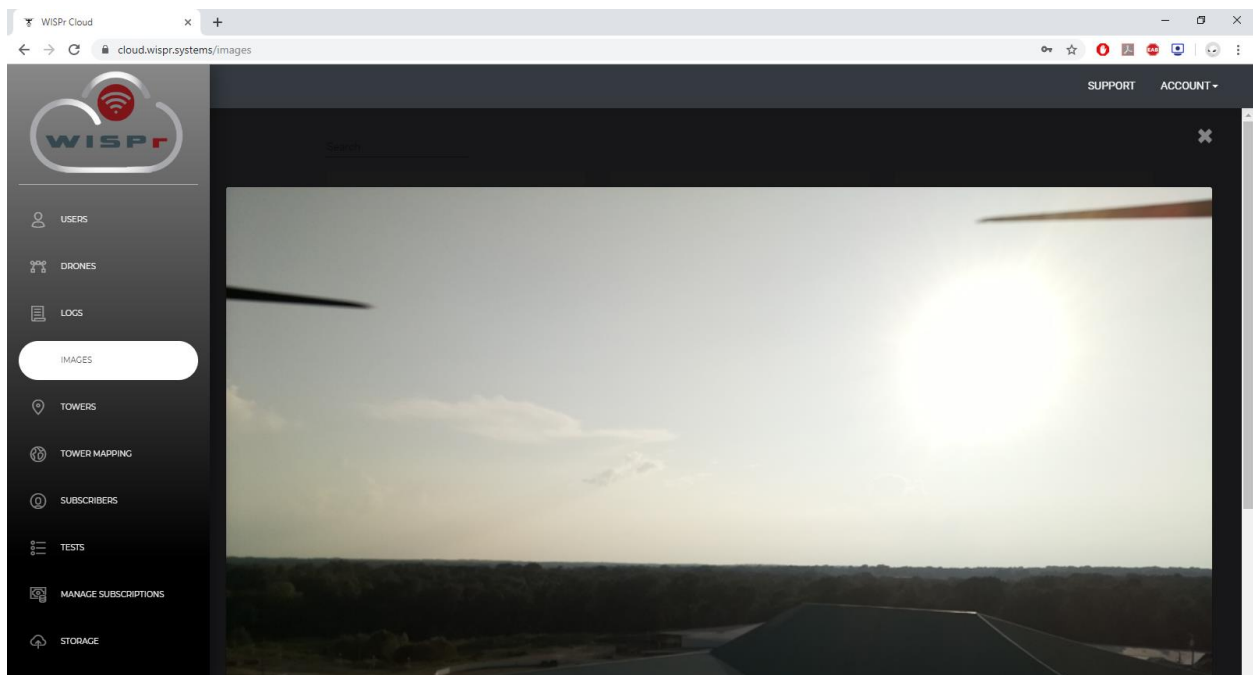
TOWERS

The WISPr CLOUD stores tower coordinates to be used during flight and when configuring autonomous surveys. You can manually enter in each new tower or upload a .json file to populate.

Enter the tower name, height of tower, latitude, and longitude, and add subscribers correspond to that tower, then click "Add New Tower"

To edit a tower location, click edit. A pop-up will appear that allows you to make changes to the tower. Click "Save" to save the new tower information.

TOWER MAPPING

Tower Mapping is in beta and is offered for a limited time free through the WISPr CLOUD.
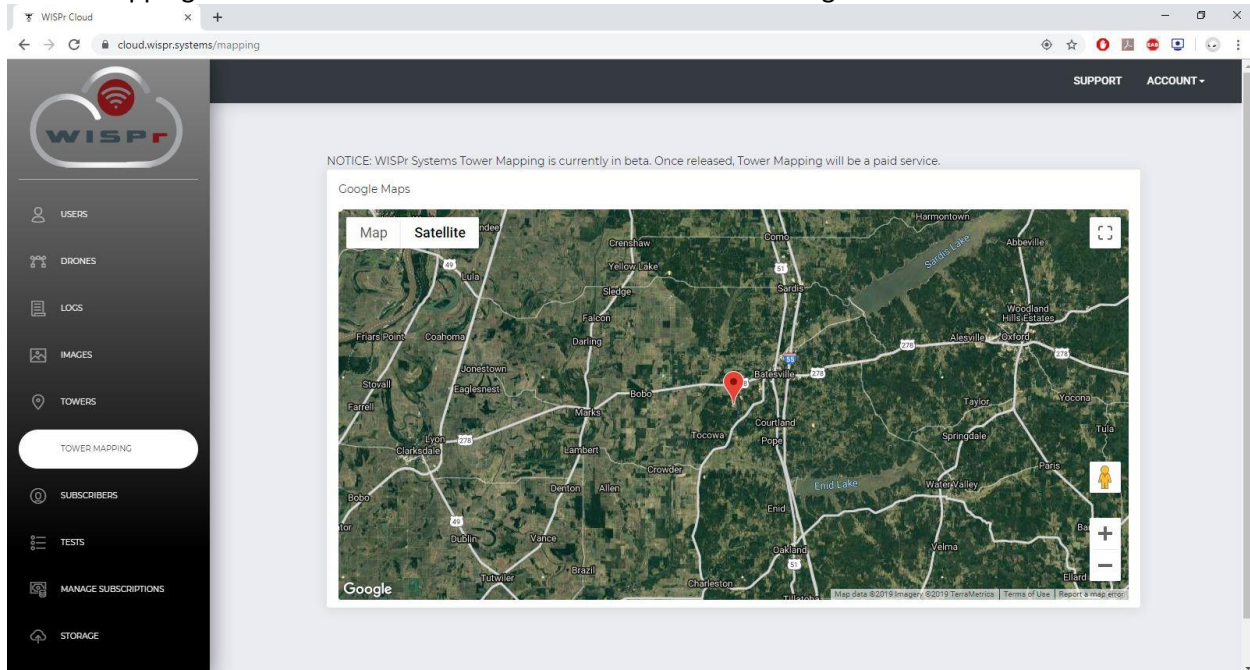
Towers, subscribers and pictures populate the map.
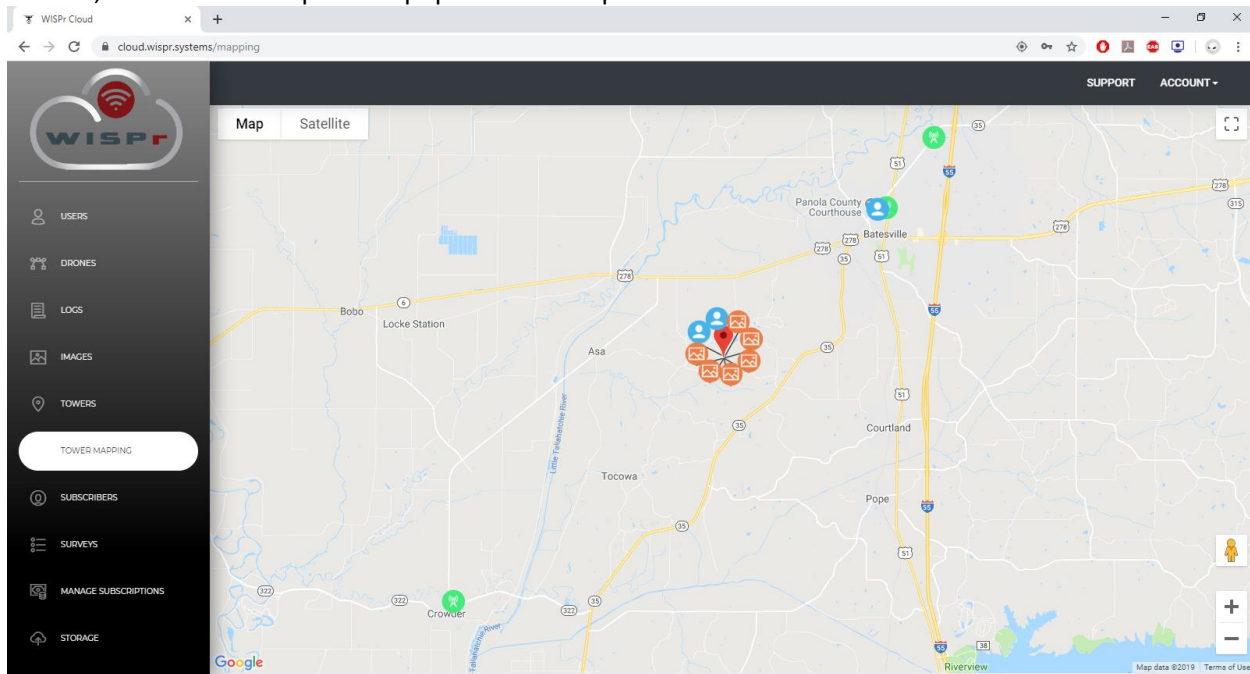
Click image icon to view the picture.
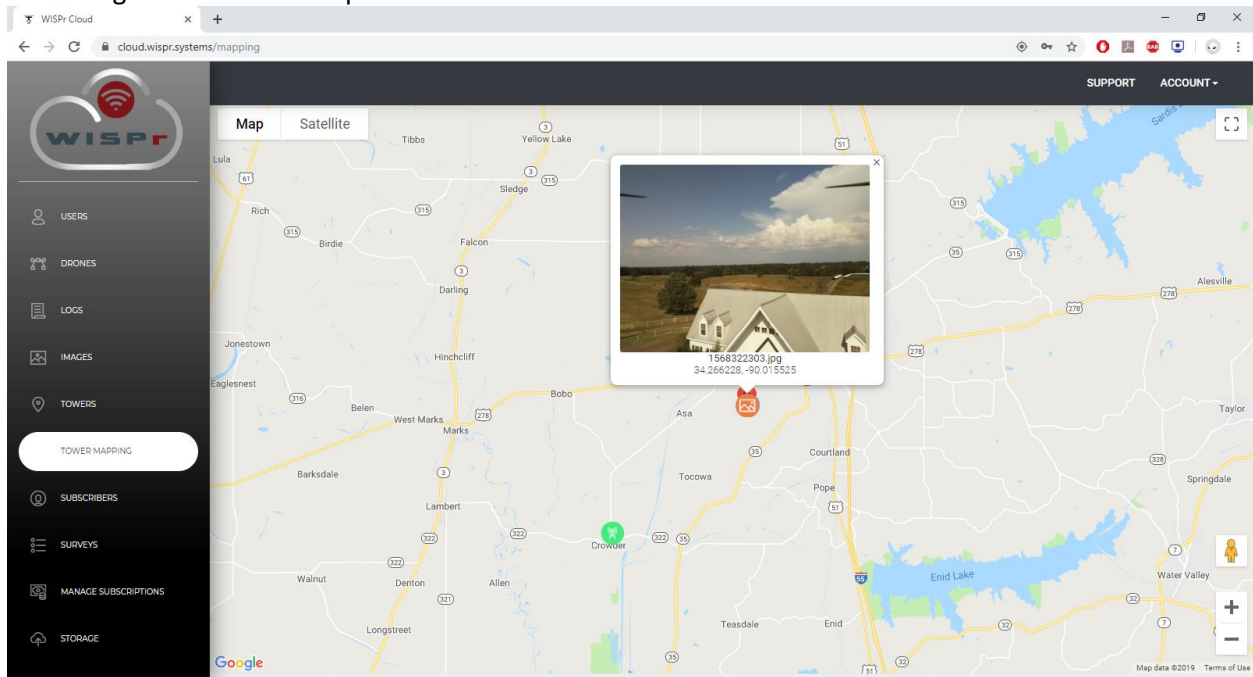
SUBSCRIBERS

The WISPr CLOUD stores subscribers to be used during flight and when organizing preconfigured autonomous test and flight logs. You can manually enter in each new or old subscribers, or upload a .json file to populate. An example of the .json file format will be located at the end of this manual.

Enter the subscribers name, address, zip code, what tower(s) correspond to that subscriber and you have the option to add the Powercode, Sonar or VISP ID (to use when connecting API to the WISPr CLOUD), then click "Add".

SURVEYS

Create autonomous surveys in the CLOUD to be run on the WISPr OS.

You can search through pre-configured surveys using the subscribers name or by the name of the log. You can edit survey entries.

To view pre-configured surveys, click the view test button and information about the pre-configured survey will appear.

To configure a "New Tower Survey", first correspond the survey to a subscriber and enter a log name. Next, enter a maximum and minimum altitude and a tower coordinate or azimuth in the direction of the access point you plan on connecting to. Click "Save New Tower Survey" to save the survey.

To configure a "AP Scanner", first correspond the survey to a subscriber and enter a log name. Next, enter an altitude in which you want the survey to take place. Next, enter 1-4 tower coordinate or azimuths in the direction you want to survey. Click "Save AP Scanner" to save the survey.

AP SCANNER

When the survey is pre-configured in the WISPr CLOUD, an altitude is selected by the user.

Next, select either 1-4 azimuth(s) or tower coordinate(s) of the access point(s) in which you want to scan for, and the time in which you want to scan either 30 seconds to 1 minute.

The drone flies up to the altitude selected then rotates, locates each tower coordinate(s) or azimuth(s) selected, and scans at each point(s) for the time frame selected. The CPE will receive all access points available in the frequency range of the CPE used. All access points will be saved to the logs with signal strength, azimuth, and altitude in which the access point is located.

When the survey is done the drone stays at the location in which the survey ended.

WARNINGS

Make sure you are running this survey in an open area at least 50 feet from any obstructions (trees, people, houses, buildings, vehicles, etc.)

Do not fly directly over roof unless you are a minimum of 20 feet; propeller wash can cause the POGO to crash.

To configure a "Near Roof (New Tower Survey)", first correspond the survey to a subscriber and enter a log name. Next, enter a relative altitude (30 feet maximum) and a tower coordinate or azimuth in the direction of the access point you plan on connecting to. Click "Save Near Roof Survey" to save the survey.

To configure a "Near Roof (AP Scanner)", first correspond the survey to a subscriber and enter a log name. Next, enter a relative altitude (30 feet maximum) and a tower coordinate or azimuth in the direction of the access point you plan on connecting to. Click "Save Near Roof Survey" to save the survey.

To pre-configure a Go-To simply enter a name and a corresponding subscriber. Enter Altitude and/or Azimuth or tower coordinate. Click "Save Go-To" to save the pre-configured test.

MANAGE SUBSCRIPTIONS

Manage WISPr OS drone subscriptions through the CLOUD. Each drone must have a subscription.

STORAGE

If you ever go over the 5GB storage given with the WISPr CLOUD, you must purchase more to continue to store more data. This can be done from here.