



IKE 4

user manual



Visit <http://ikegps.com/ike-4/> for
software updates • manuals • tutorials • videos

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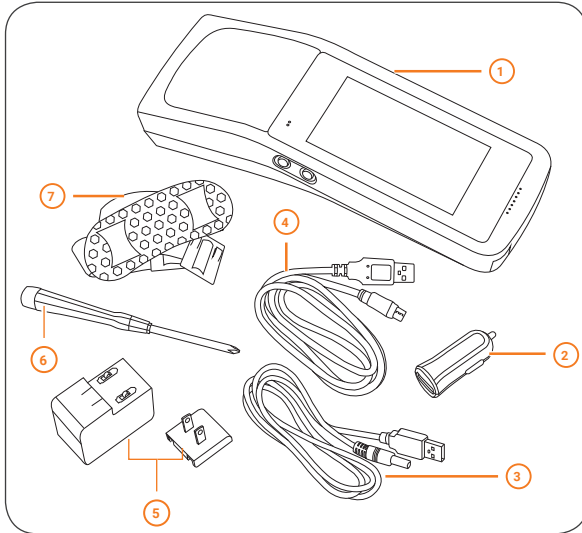
Thank you for purchasing the IKE 4 Your IKE 4 is a location-based measuring solution that will greatly increase your productivity when undertaking utility asset management surveys and related measurements. The IKE 4 integrates a digital camera, compass, laser range finder, mobile computer, and precision GPS.

With your IKE solution you can quickly:

- Collect geo-located pole photos
- Measure wire span heights, even across busy roads
- Determine wire clearances from vegetation or buildings
- Make accurate attachment height measurements on captured photos

This document will guide you through:

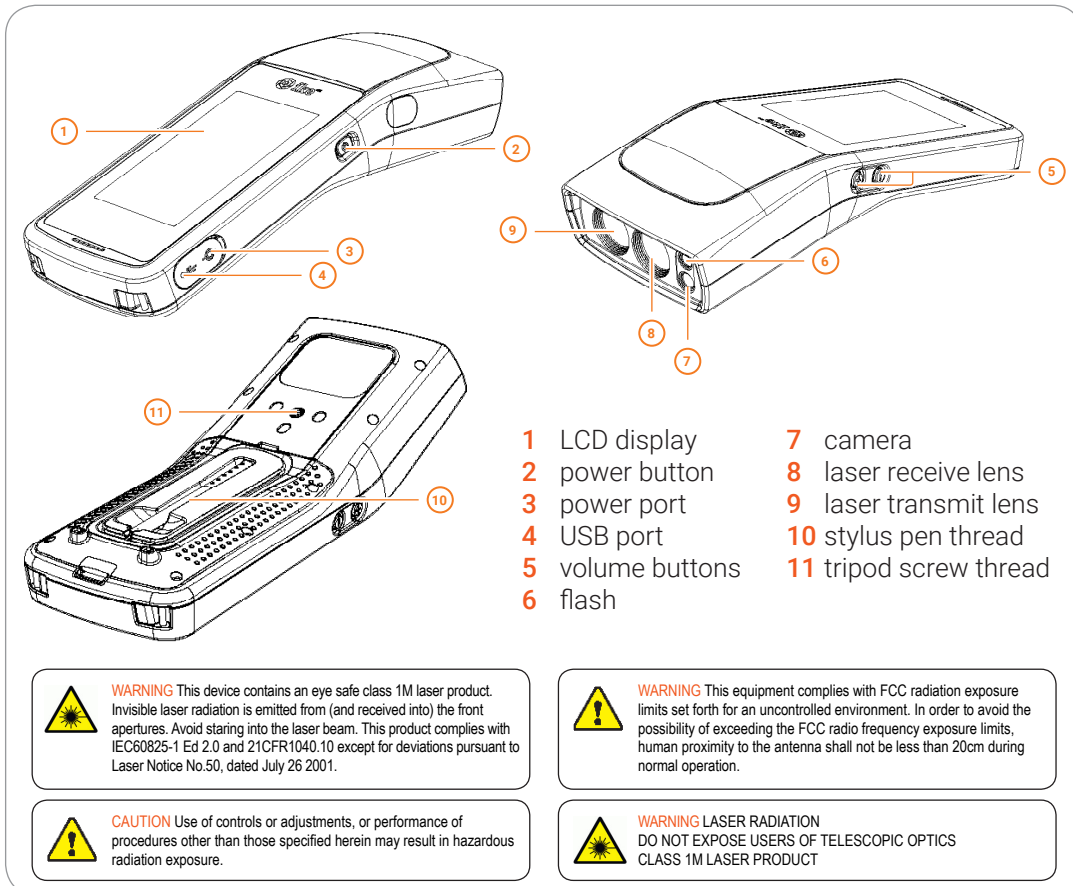
- Setting up your IKE system
- Making in-field measurement tasks
- Transferring data from the IKE Field to IKE Office
- Measuring attachment heights from a photo
- Outputting data in industry standard file formats



- 1 IKE device
- 2 USB car charger
- 3 power cable
- 4 micro USB cable
- 5 AC charger with plug adapter
- 6 screwdriver
- 7 shoulder strap for hard case
- 8 hard case (not shown)

A SIM card and SD card are not included.

IMPORTANT: The IKE 4 device is designed to be used with the IKE Tripod. It should not be used while being held by hand or placed close to the user's body.



- 1 LCD display
- 2 power button
- 3 power port
- 4 USB port
- 5 volume buttons
- 6 flash
- 7 camera
- 8 laser receive lens
- 9 laser transmit lens
- 10 stylus pen thread
- 11 tripod screw thread



WARNING This device contains an eye safe class 1M laser product. Invisible laser radiation is emitted from (and received into) the front apertures. Avoid staring into the laser beam. This product complies with IEC60825-1 Ed 2.0 and 21CFR1040.10 except for deviations pursuant to Laser Notice No.50, dated July 26 2001.



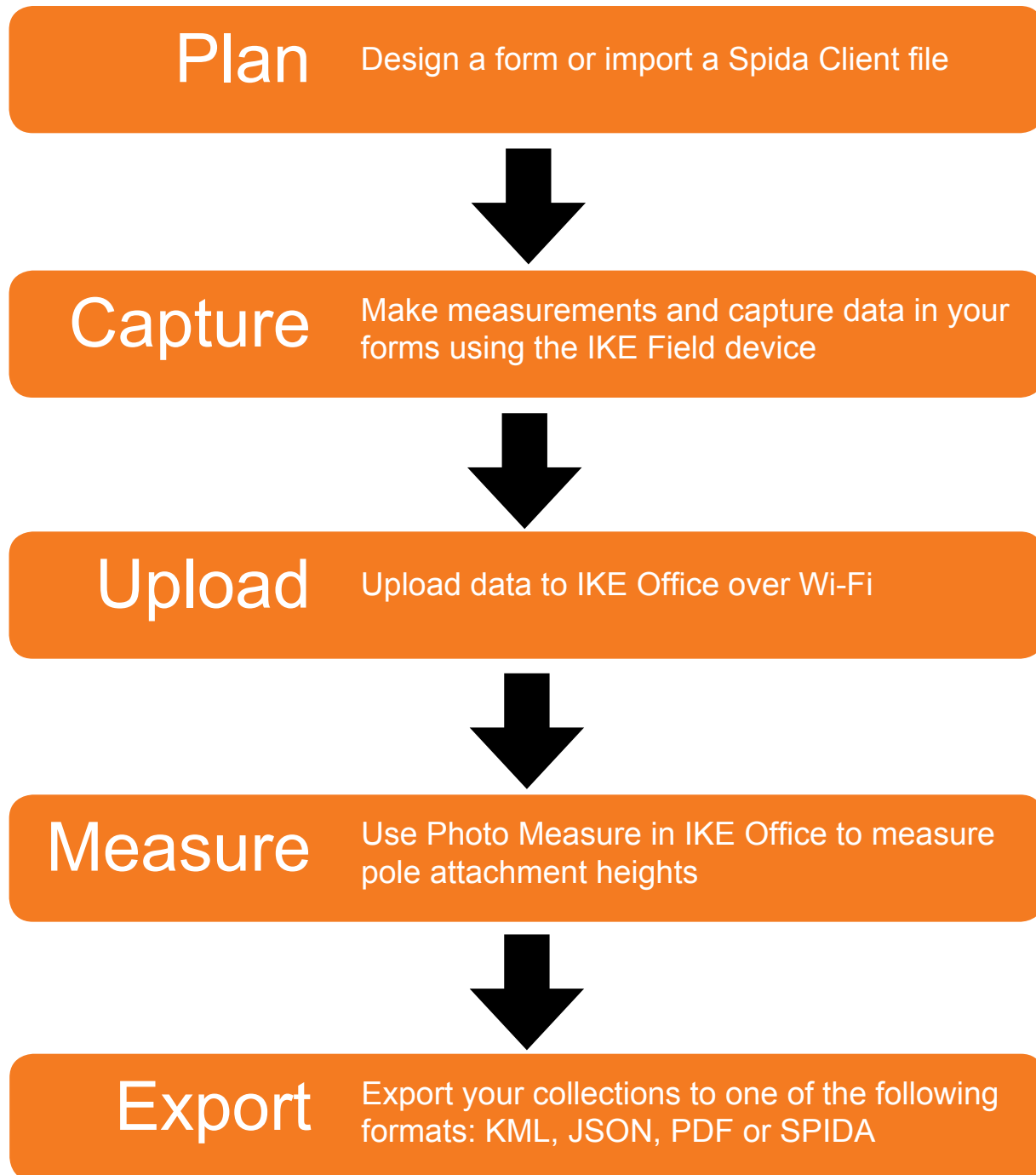
WARNING This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation.



CAUTION Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.



WARNING LASER RADIATION
DO NOT EXPOSE USERS OF TELESCOPIC OPTICS
CLASS 1M LASER PRODUCT



IKE 4 software

IKE Office

IKE Office makes data transfer from your IKE Field device simple. Customize and deploy forms directly to your IKE Field device and export various file types from captured data. Make accurate photo measurements and save marked-up photos.

IKE Field

Your device has been shipped with the latest factory software – your installed version shows on the IKE Field device main screen. However, the team at IKE regularly makes product improvements. Updates will be delivered to your device via the Google Play store. You only need to update the software when prompted, and you will stay up to date.

IKE 4 documentation

IKE 4 setup guide

A guide to getting started with your IKE field device

IKE 4 user manual (this guide)

The most comprehensive A-Z guide to using your IKE device

IKE 4 fieldcraft guide

How to get the best results from your IKE, tips and tricks to improve performance, accuracy, and productivity

additional software

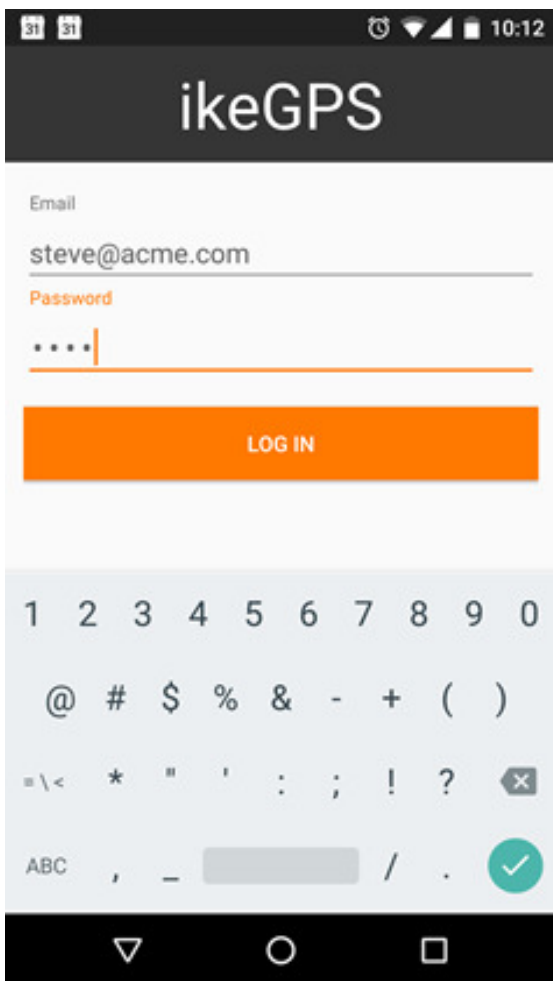
- Web Browser – IKE Office supports Internet Explorer 11+, Firefox and Chrome browsers.
- Google Earth™ – View your data and measurements by clicking on their location on aerial photographs.

Your device is designed to be used with the IKE 4 tripod, which provides a stable platform to obtain the most accurate results when measuring objects such as target poles and wires. The tripod has a low magnetic signature that will not affect the IKE device's compass, which helps provide accurate measurements.

Important: Tripods other than the IKE tripod will likely produce less accurate results than the IKE tripod.



IKE Field
Signing In
Settings
Creating a job
Downloading forms
Starting a collection
Viewing the map
Uploading data
Making measurements



1. Sign in to the application with the same email and password as you used for IKE Office.

This user information will be saved, so the next time the application is opened it will already be logged in to the most recent account.



After turning on the IKE, navigate to the device's **Settings**.

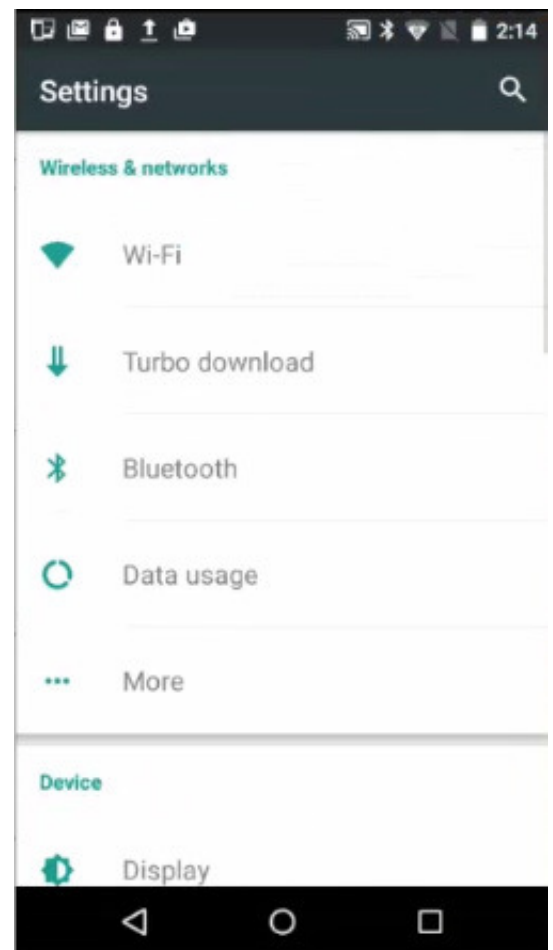
There are four (4) separate **Settings** sections:

- Wireless & networks
- Device
- Personal
- System

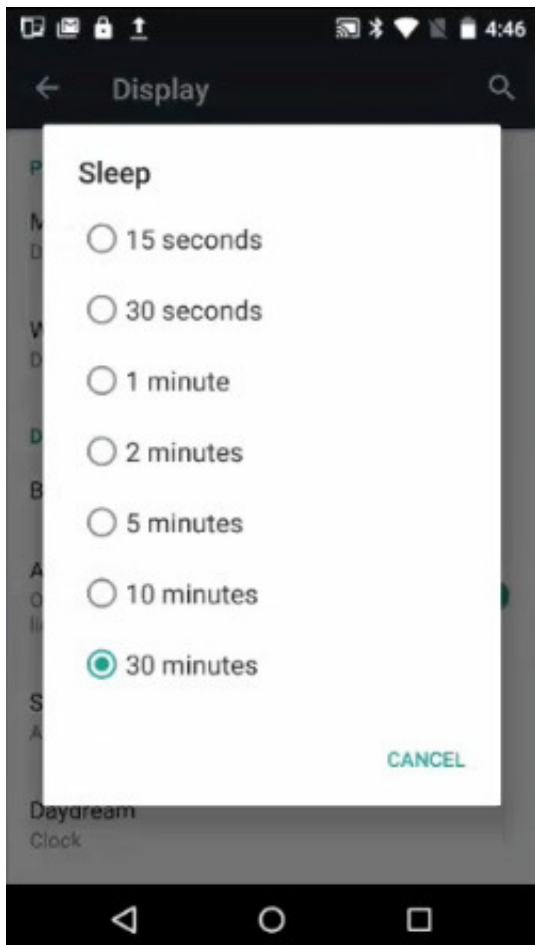
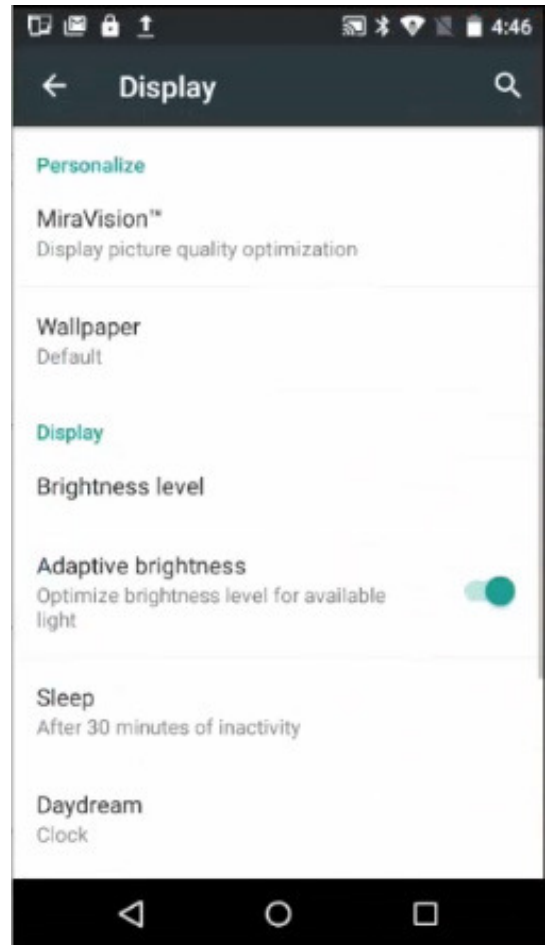
Each will be discussed briefly, in general.

Wireless & networks

- **Wi-Fi** – touch **Wi-Fi**, and then touch the slider to move it to the **On** position. Choose a wireless connection.
- **Turbo download** – touch **Turbo download** to download large files (>20 MB) faster, using the Wi-Fi and 4G/3G networks simultaneously. Touch the slider to move it to the **On** position.
- **Bluetooth** – touch **Bluetooth**, and then touch the slider to move it to the **On** position. Choose a **Bluetooth** device
- **Data usage** – touch **Data usage** to check daily and total data usage. Default is **OVERVIEW**. Touch **Wi-Fi** to view app usages. Touch available monthly segments to compare across time.



- **More** – Touch **More** to access
 - Airplane mode
 - Tethering & portable hotspot
 - VPN
 - Cellular networks



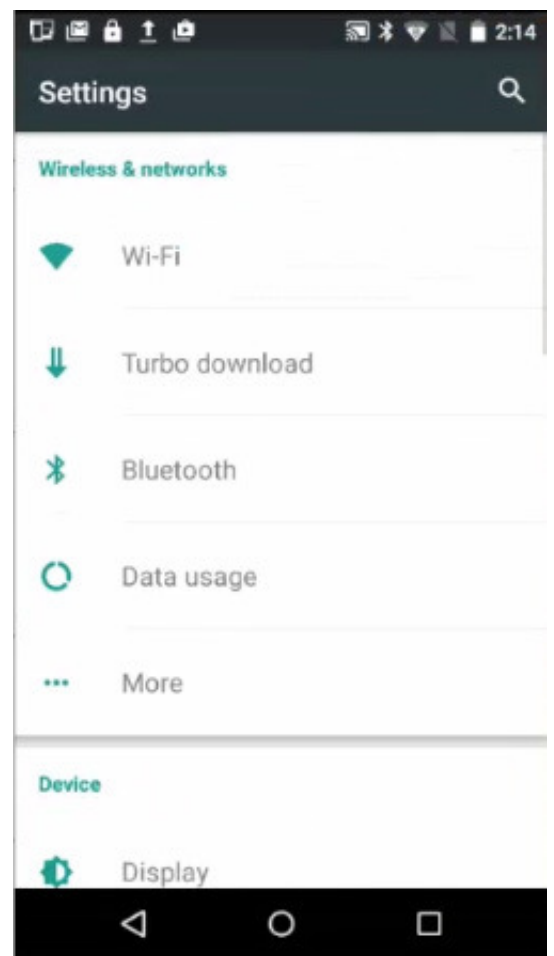


1. After turning on the IKE, navigate to the device's **Settings**.

2. Move to the **Wireless & networks** section.
3. Select the router you want.
4. Enter the router's password and select **CONNECT**.

For extended Internet coverage, use a standard AT&T SIM card, or a micro or nano card with an adapter, in the IKE SIM card slot under the battery.

Refer to **IKE 4 Training Module 4** for further details.



5. Navigate:

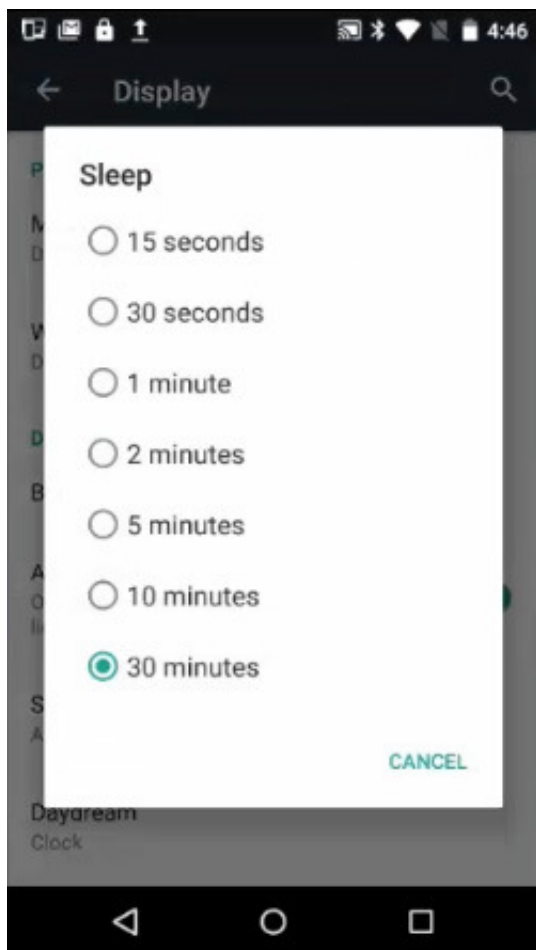
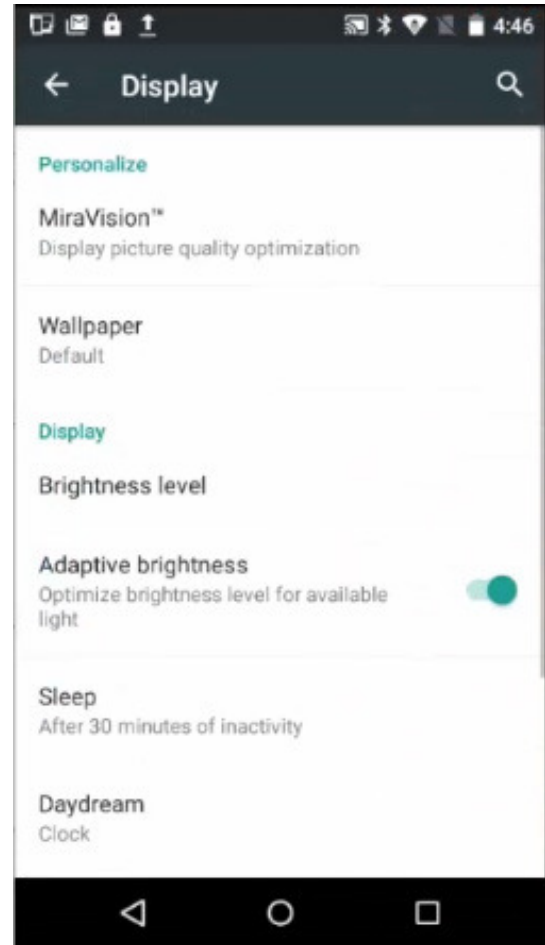
Settings > Device > Display

There you can change

- Brightness level
- Adaptive brightness
- Sleep

Change the **Brightness** level for easy viewing.

Adjust the **Adaptive brightness**, depending on the light in your environment.



Change the **Sleep** mode setting to save battery life during periods of inactivity.

6. Navigate:

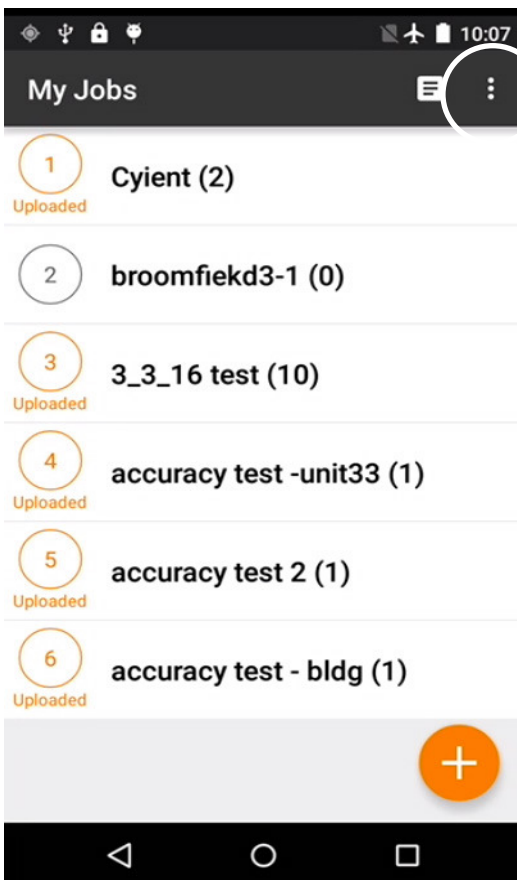
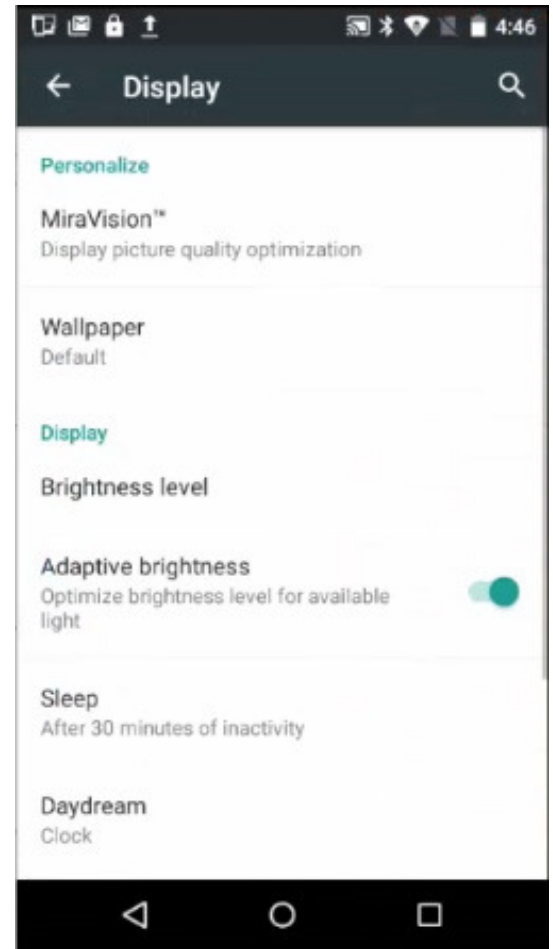
Settings > Personal > Location

Touch **Location** to manage:

- Location settings
- Satellite-based augmentation systems (SBAS)

For the IKE device's GPS to function correctly, SBAS must be turned on

- **Location** – touch **Location**, and then touch the slider to move it to the **On** position.
- **SBAS** – touch the **SBAS** slider to move it to the **On** position.



IKE Settings

1. Sign in to the IKE Field app, using the same sign in information as the IKE Office account.

The app opens to the **My Jobs** screen.

2. On the **My Jobs** screen, touch the

More icon () in the upper-right of the screen.

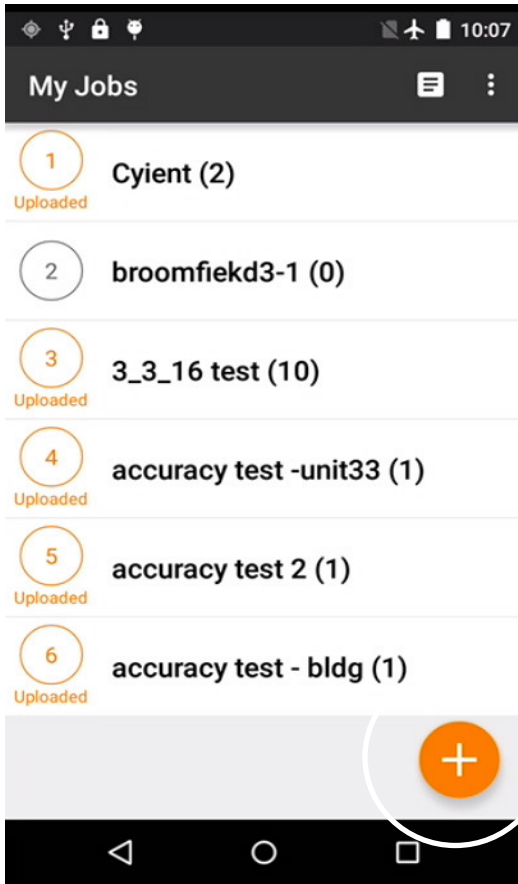
3. Touch **Settings**.


Now you can change

- the **Date Format**
- the **Measurement Unit**.

4. Touch **Date Format** to choose between MM/dd/yyyy and dd/MM/yyyy formats.

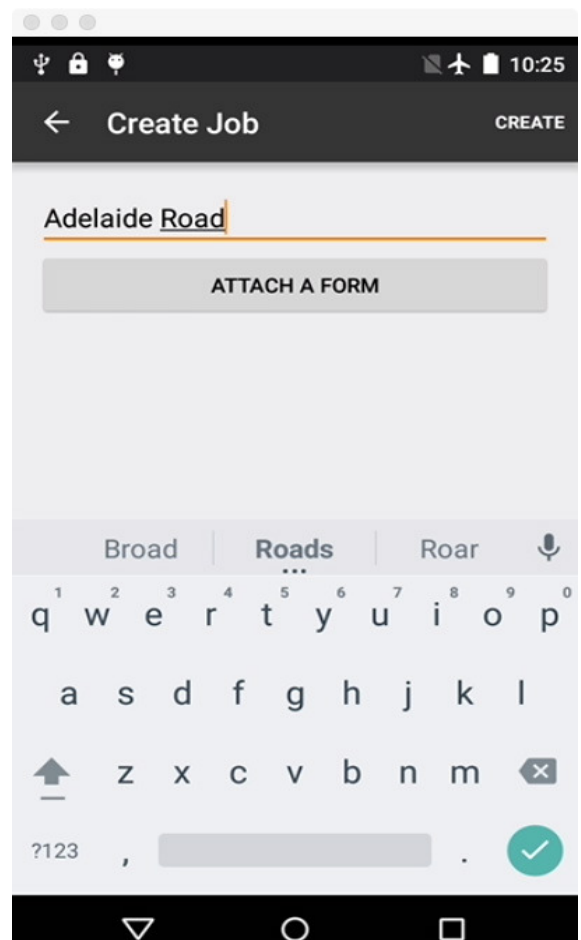
5. Touch **Measurement Unit** to choose between feet and meters.

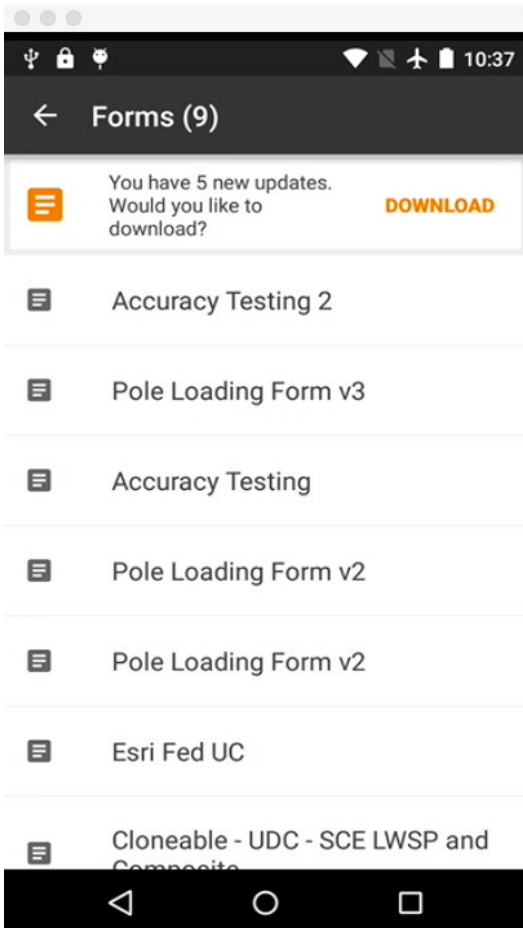


1. To create a job, navigate to the My Jobs screen.
2. Touch the orange plus icon .

3. Enter the name of the Job.
4. Touch **ATTACH FORM**.

When connected to the Internet, the page will automatically check for available updated and new forms.

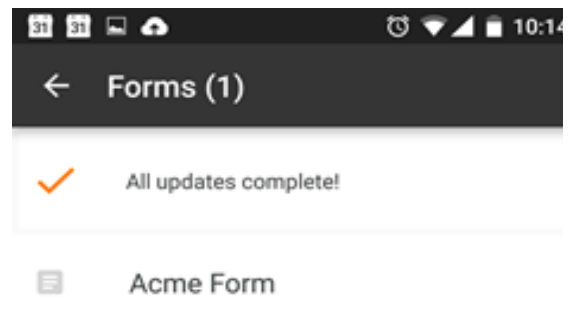


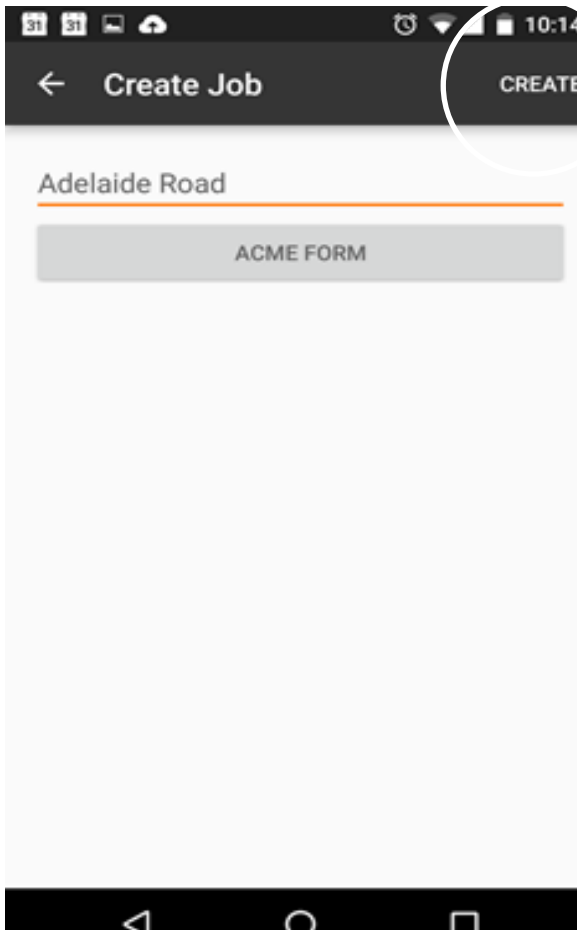


5. Tap **DOWNLOAD** to download the latest forms.

When forms are downloaded, you have access to them, even without Internet connectivity.

6. Select the form you want to use.

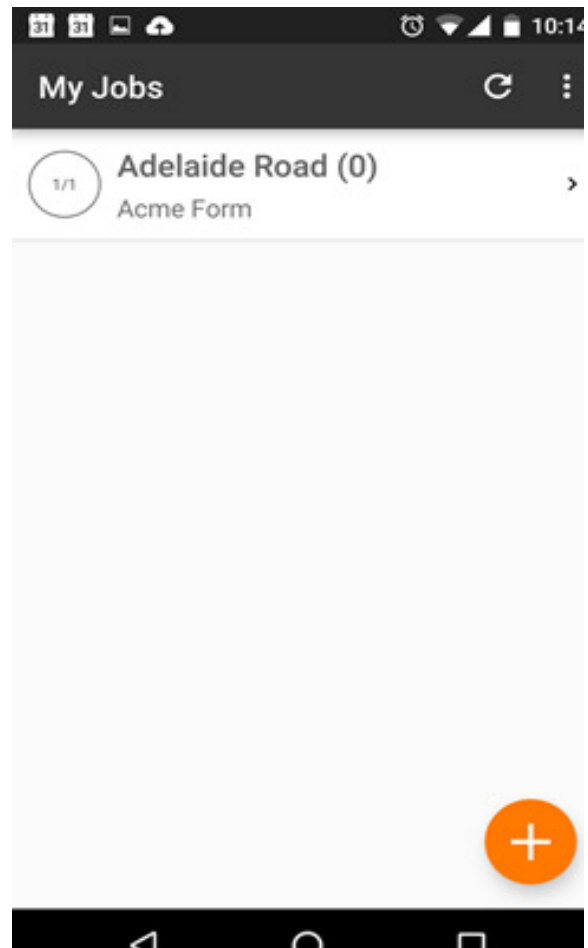





7. When the job has a name and a form attached to it, tap the **CREATE** button in the top right.

To ensure you have the resources for data collection, we recommend creating a job and applying the form before going on site. If your IKE device has a SIM card or Wi-Fi connectivity in the field, you will be able to receive form updates.

8. The **My Jobs** screen shows all of the jobs on the device. Select the Job you wish to work on to proceed.

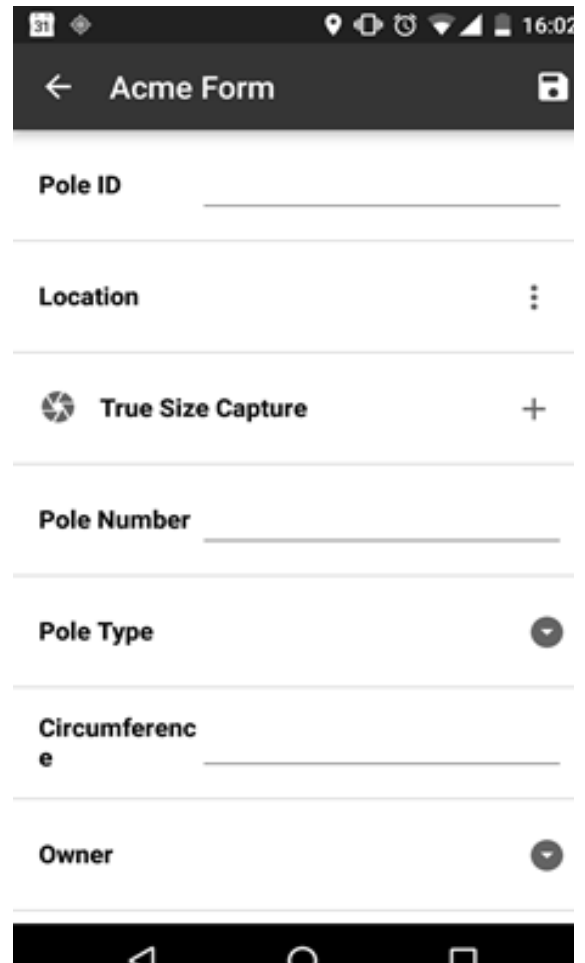


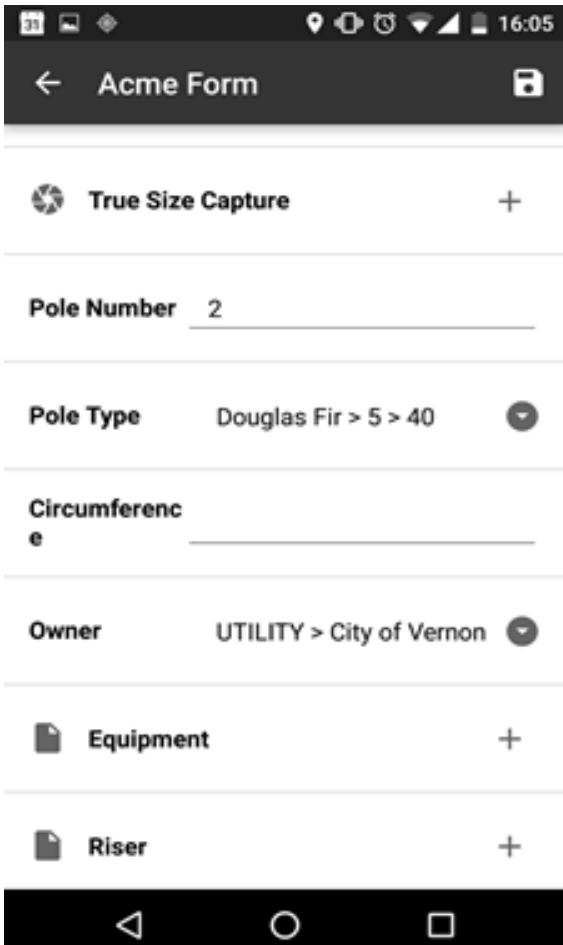



9. Now you are ready to start collecting form data. Tap the  button to create your first collection.

10. You can enter data directly into the on-screen form and use tools to make measurements.

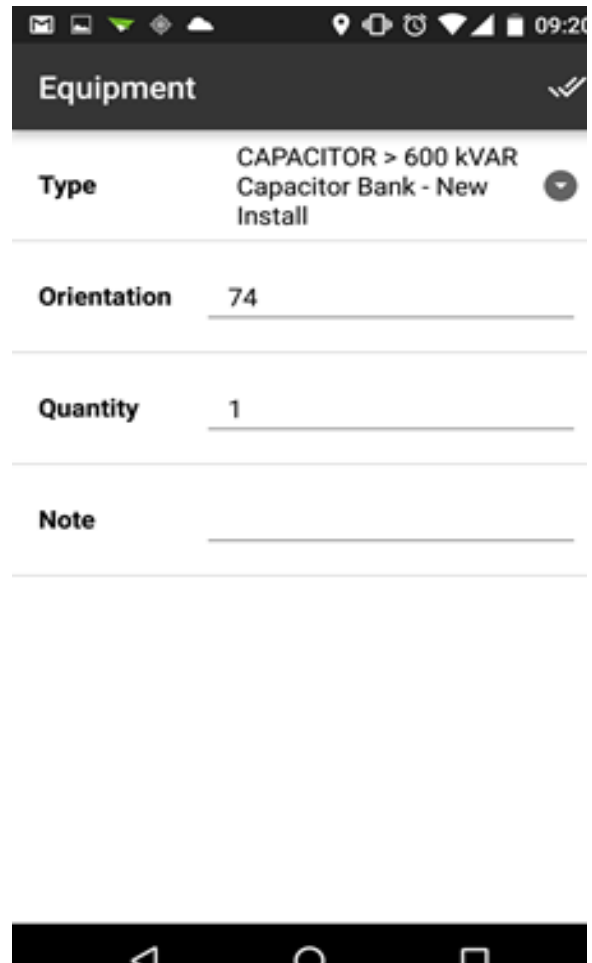
Anything with a plus button can be repeated multiple times.

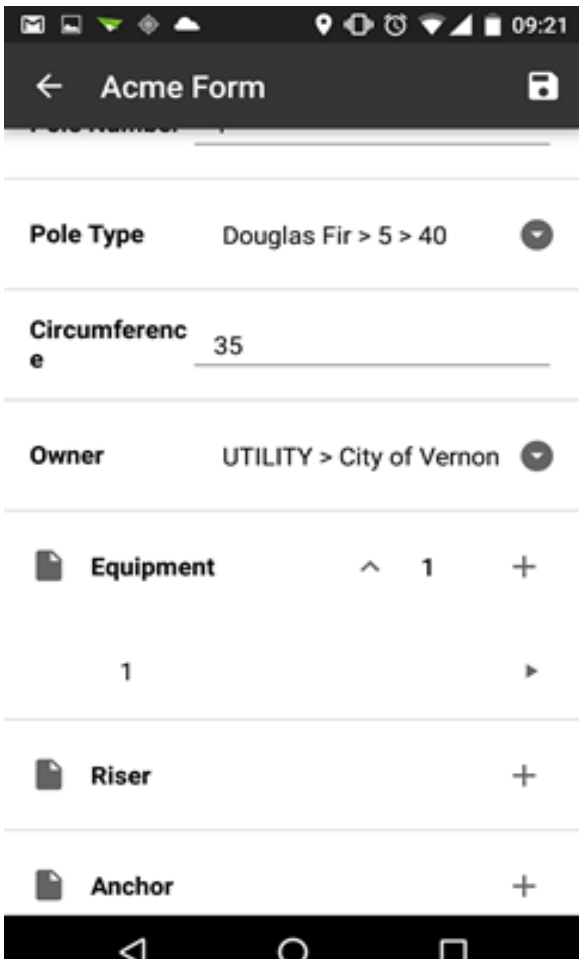




11. Tap the  next to equipment sub-form to start collecting data about that attachment.

12. When you have collected all of the information about the equipment, click the done button at the top right.





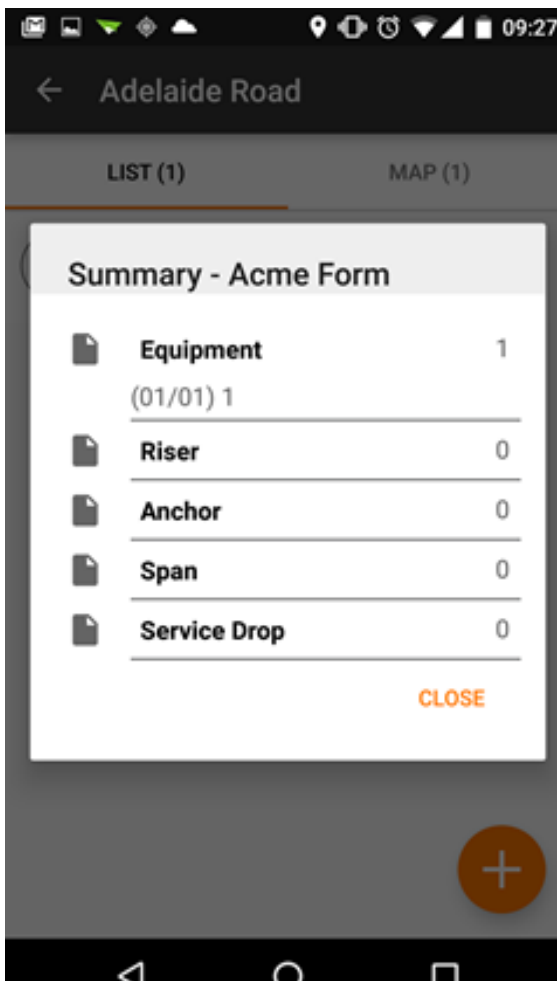
13. You can see that one piece of equipment has been captured.

Tap the **Save** icon to keep this information.
Tap the **Back** icon to go back to the Job screen.

14. The Job screen shows all of the collections you have made for this job in both a list and on a map.

Tapping the down arrow next to a collection shows a summary.



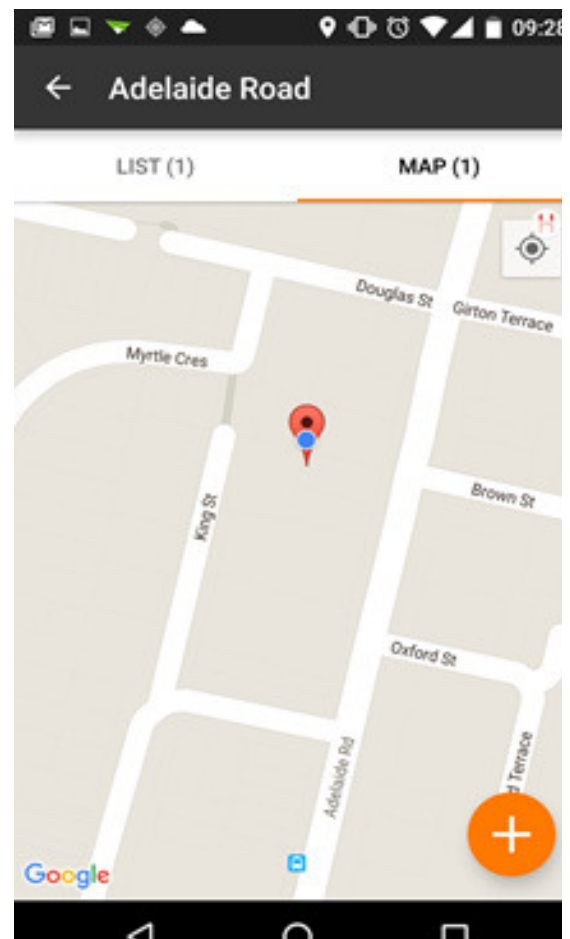


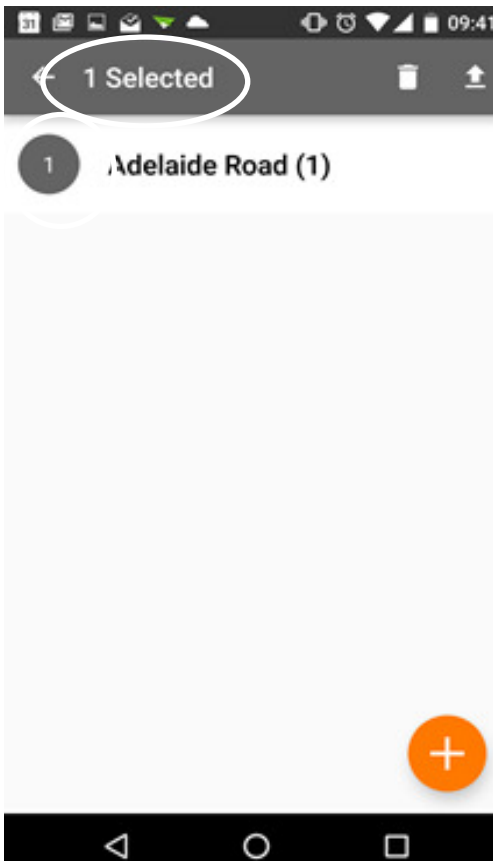
15. The summary gives you an overview of a collection by showing which sub-forms have been collected.

16. Tapping the Map tab shows your collections for this job on a map.

17. Tapping the + will take you to the form screen to add another collection.

18. Tapping on the location balloon will take you to that collection.





After you've collected the data, you will want to upload the data to the IKE Office.

1. Re-establish a Wi-Fi connection or utilize a data package through an AT&T SIM card, if necessary.
2. Return to the jobs list on the **My Jobs** screen.
3. Touch the gray, outlined circle to the left of the job name.
4. Ensure the number to the left of the job becomes highlighted in gray and the correct number of selected files is indicated at the top of the screen.
5. Touch the upload arrow to upload your job.

A dialog box indicates the status of the upload and indicates when successful.

After uploading, the job is paired with an orange, uploaded circle.

Now you can view the job in IKE Office.

After uploading your files, we recommend exiting the IKE Field app prior to powering down the IKE device.



Local GPS Position

Acme Form

Pole ID C60

True Size Capture +

Pole Number _____

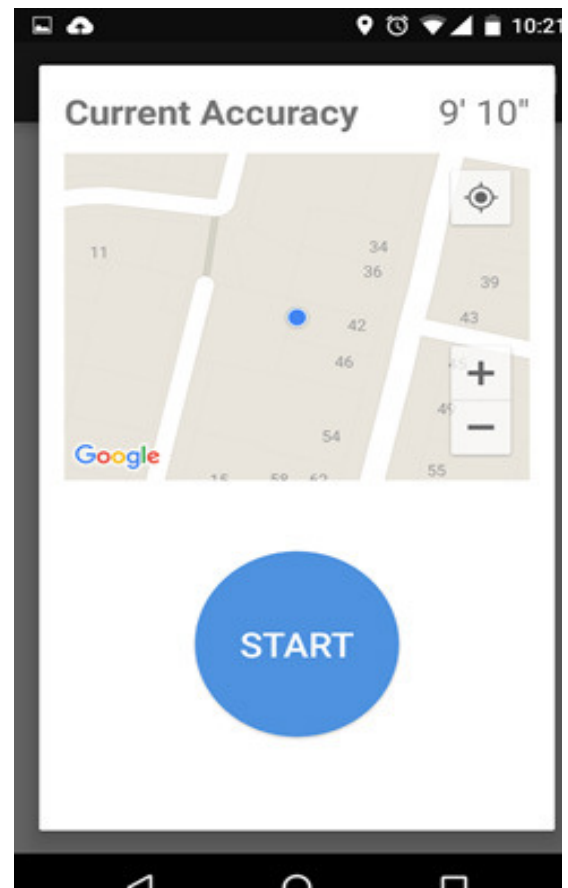
Pole Type ▾

Circumference _____

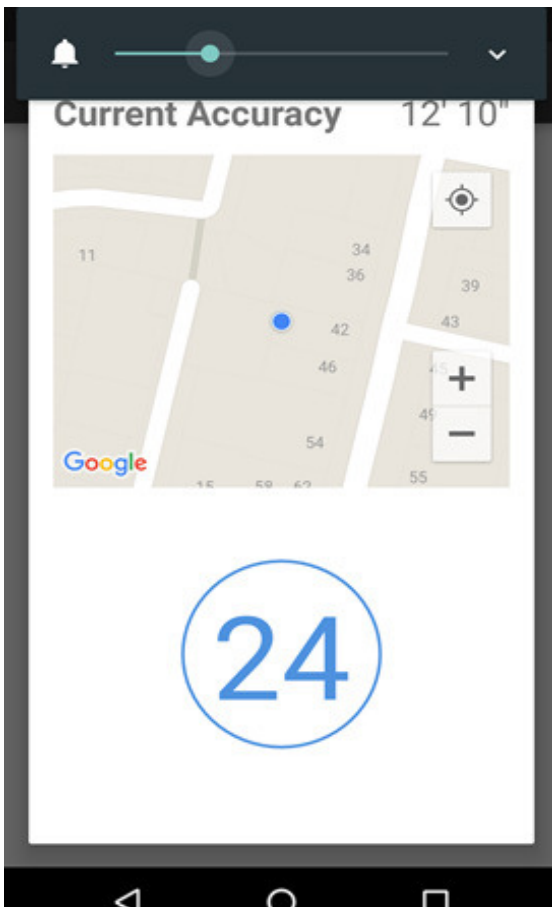
Owner ▾

1. To capture a location, select the field and choose from local position (GPS icon)(GPS only) or target position (Camera Icon) (GPS + laser offset).

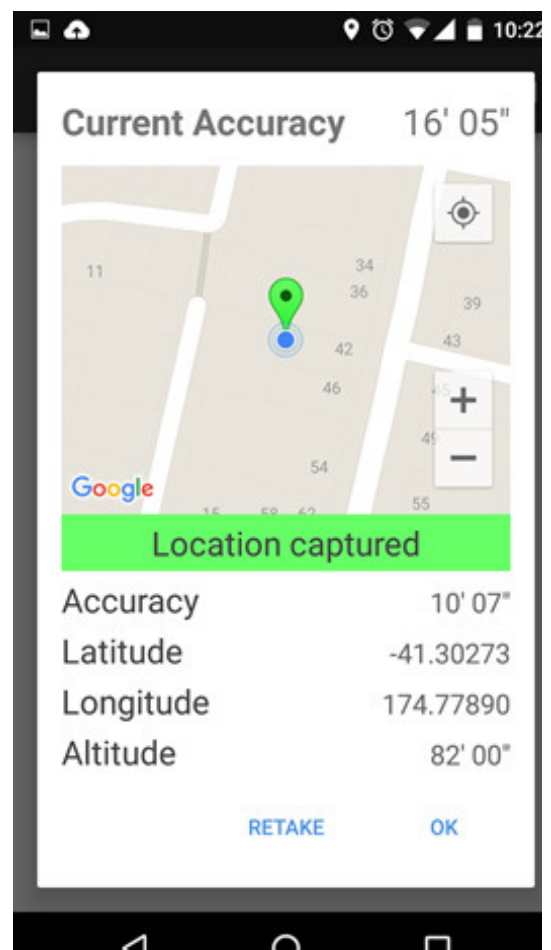
2. For the Local GPS position tool, the current accuracy shows the expected accuracy of the position. Pressing **START** begins averaging GPS data over 30 seconds to get the best accuracy. Try not to move or cover the device during this process.



3. Counting down



4. Location captured. The green pin on the map shows the location captured. The blue dot shows your current location.



Target GPS Position



1. Aim at the target with the crosshair to ensure the laser is hitting the object you want to locate.
2. Ensure the crosshair color is green which indicates that all of the instruments (GPS, Compass and Laser) are providing information
3. Tap the blue capture button at the bottom of the screen to take a picture and capture the location.

Note: you can zoom in using the slider on the right to help with aiming

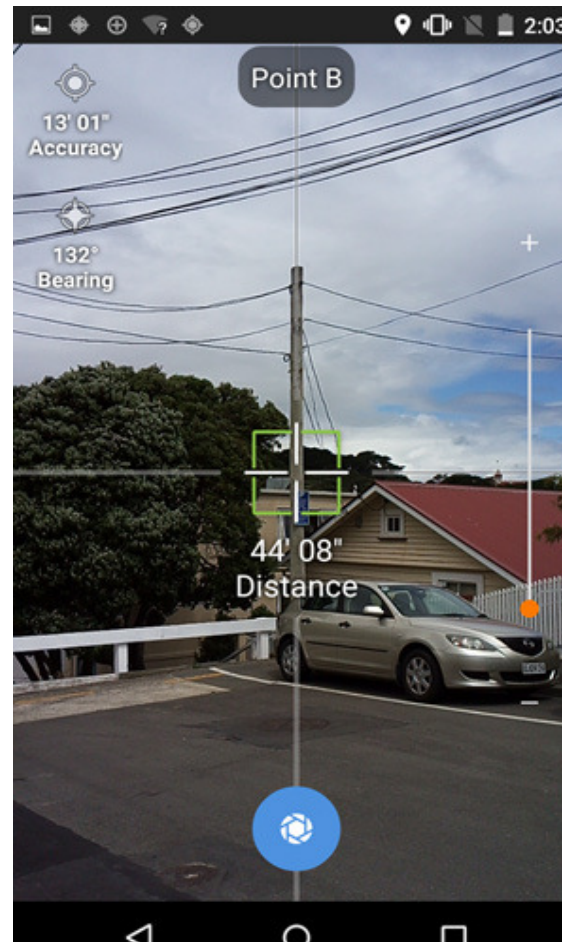
Note: tapping on different areas of the camera will change the brightness/focus, like a standard Android camera.

Point to Point

1. Aim at the first target and capture when the crosshair turns green.



2. Aim at the second target and capture when the crosshair turns green.

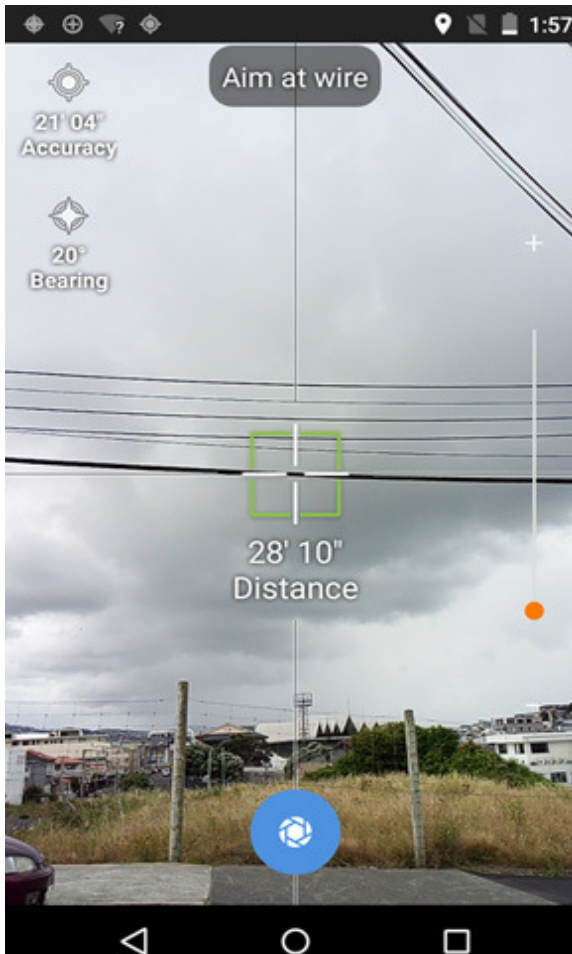




3. The distance and bearing from Point A to Point B are calculated.

4. Click **RETAKE** if you're not satisfied with your results.

Point to Point



1. Aim at the wire, wait for the crosshair to turn green and tap the capture button.

2. Use the orange guide arrows to locate the position directly below the wire.





3. When the arrows disappear and both the crosshair and the height measurement area turn green, tap the capture button.

4. The results screen shows the height of the wire and a photo with the crosshair.



Photo Measure



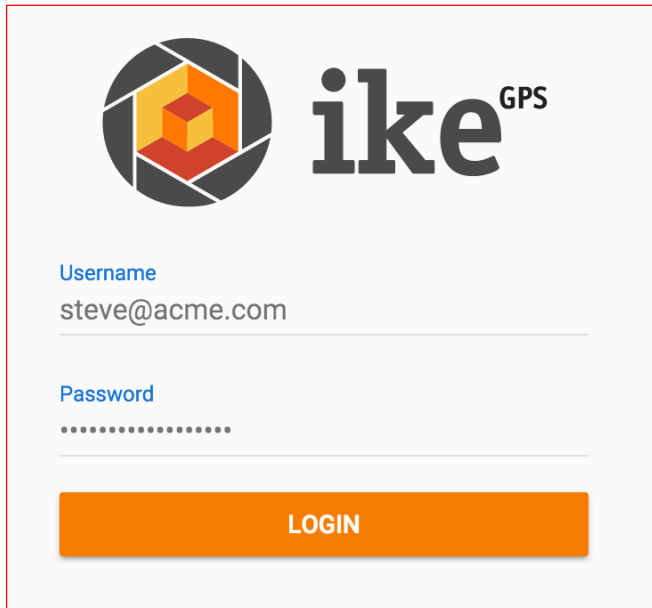
1. Aim at the pole with the crosshair.
2. Ensure the guideline that runs down the whole screen matches the angle of the pole.
3. When the crosshair is green tap the blue capture button at the bottom of the screen.

IKE Office is a cloud-based file management system with which you can

- create customizable forms
- upload and download field data
- measure heights of utility poles and their attachments

logging in

When signing into IKE Office for the first time use the admin login and password provided by ikeGPS. Enter these details, then click



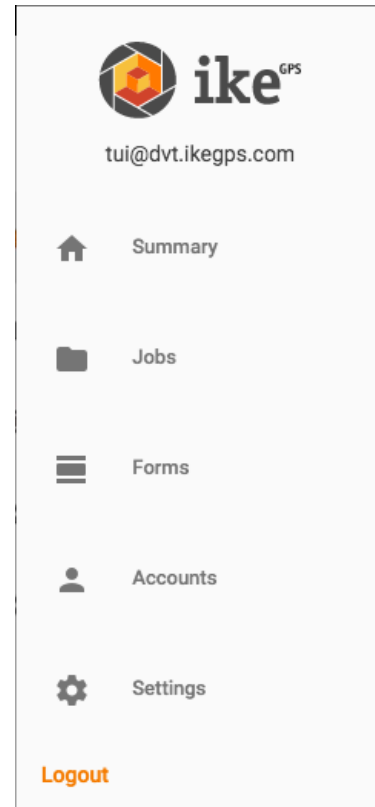
IKE Office tools

On the left side of the IKE Office page are the various IKE Office tool tabs:

- Summary
- Jobs
- Forms
- Accounts
- Settings

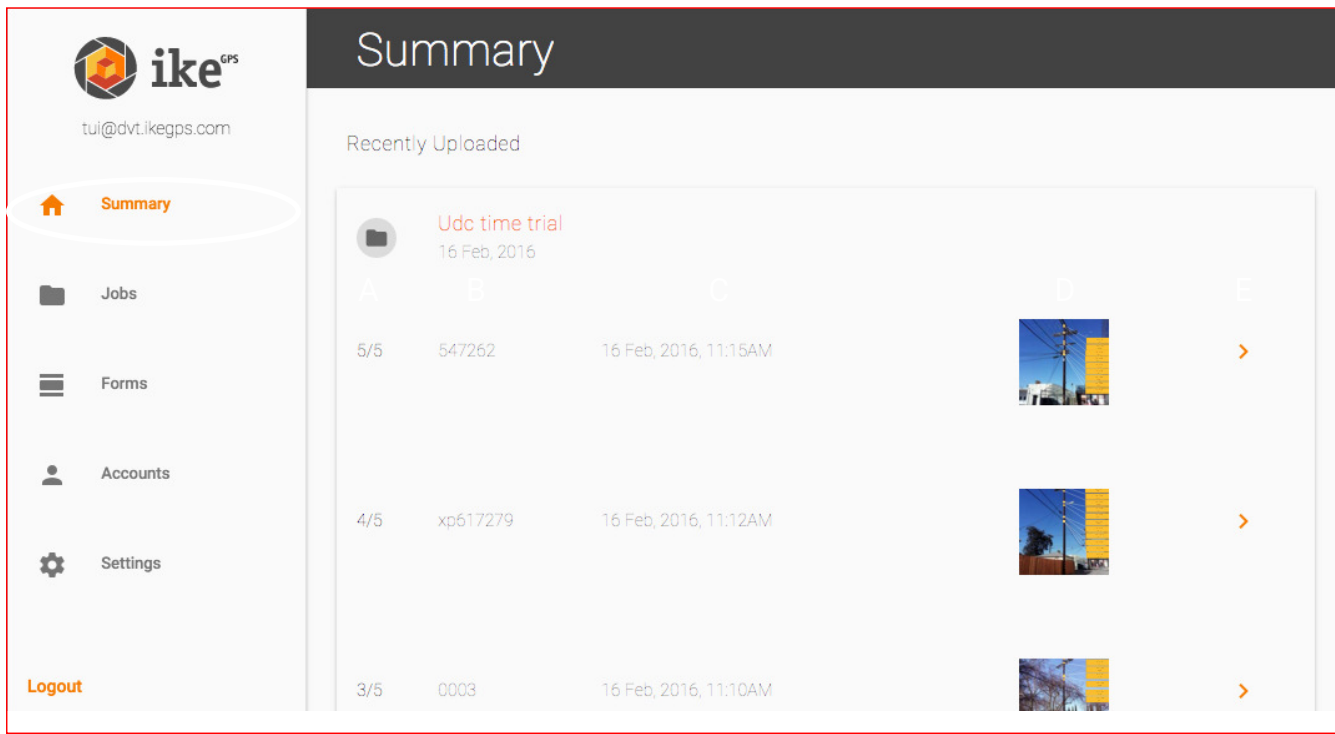
When a tab is accessed, it will be highlighted in orange.

The following section will examine each tab in detail.



summary screen

The Summary screen shows the most recently uploaded collections and jobs. From here you can navigate to an individual job or collection. To access the summary, click



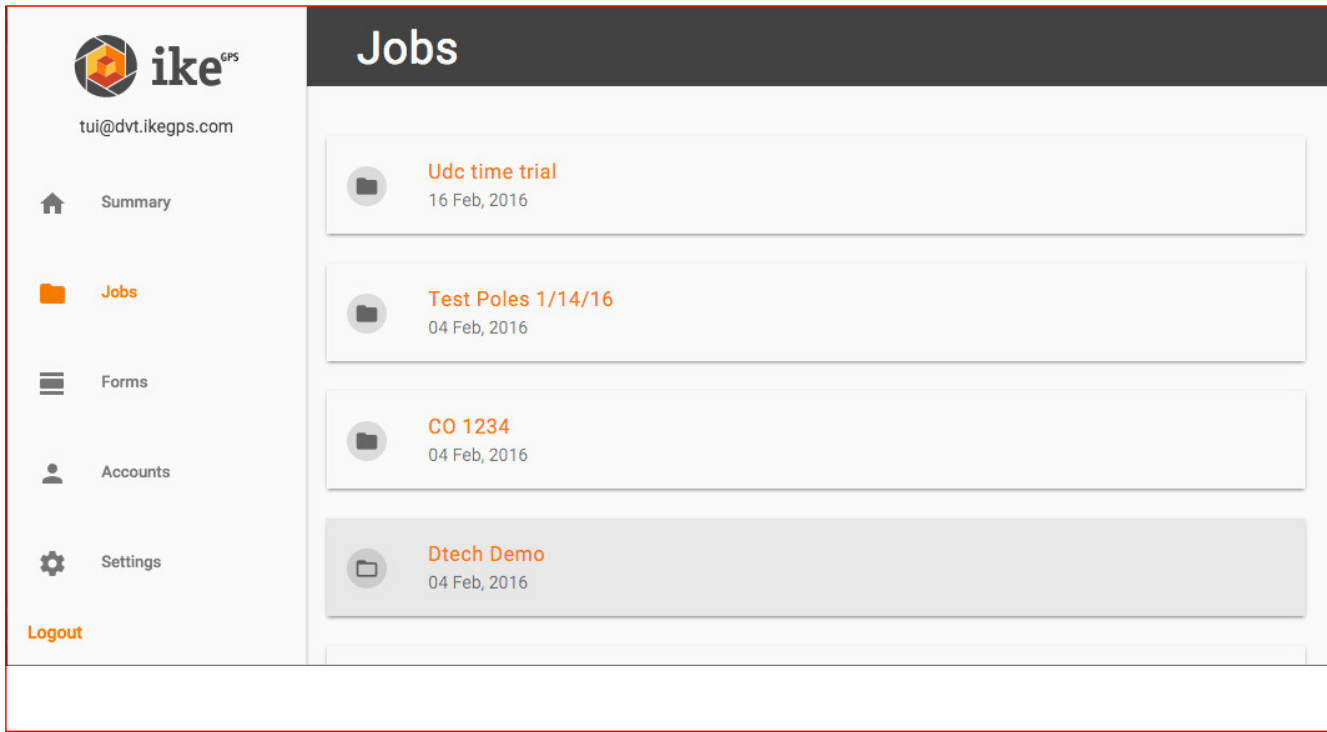
Now you see the following highlights of the uploaded jobs:

- Number of features (A)
- Pole ID (B)
- Date and time of collection (C)
- Thumbnail sets of collection captures (D)
- More information (E)

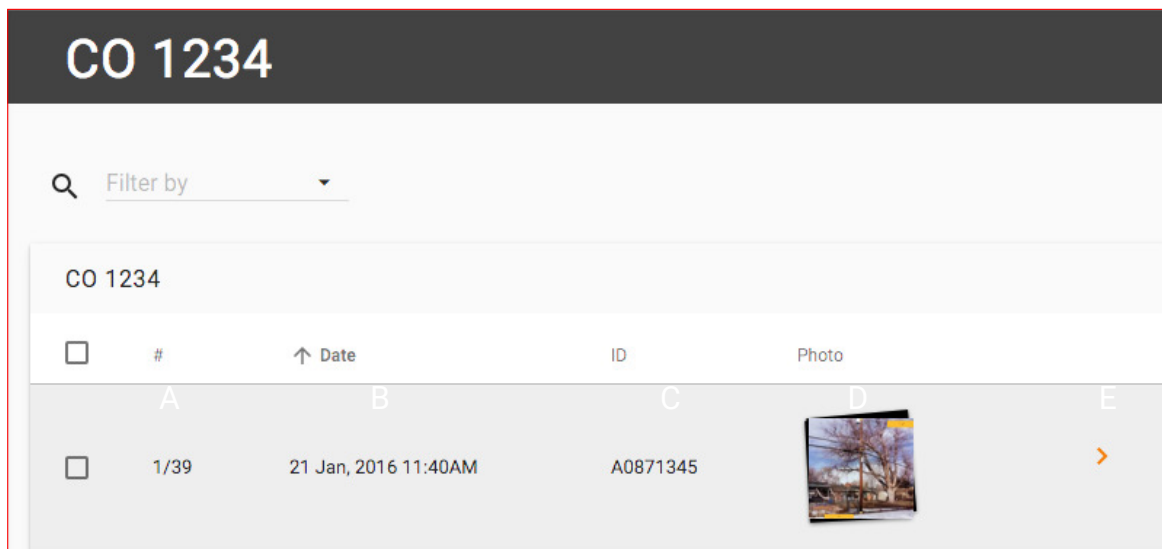
Clicking on a right arrow for more information shows you that pole's complete information.

jobs screen

The Jobs screen shows all the data uploaded from the IKE 4 device to the specific account. Jobs are displayed chronologically, based on the date they were collected. To access the jobs, click



By selecting a Job name, the job's summary appears.



Now you see the following highlights of the uploaded jobs:

- Number of features (A)
- Pole ID (B)
- Date and time of collection (C)
- Thumbnail sets of collection captures (D)
- More information (E)

Clicking on a right arrow for more information shows you that pole's complete information.

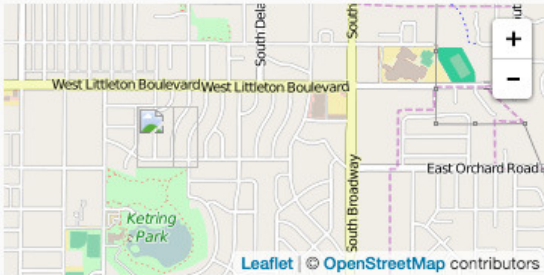
CO 1234 ↓

SPIDACalc Form v2

Pole ID A0871345


Location

Latitude	39.60959
Longitude	-104.99925
Altitude	5386' 5"
Accuracy	2' 5"



Leaflet | © OpenStreetMap contributors

True Size Capture



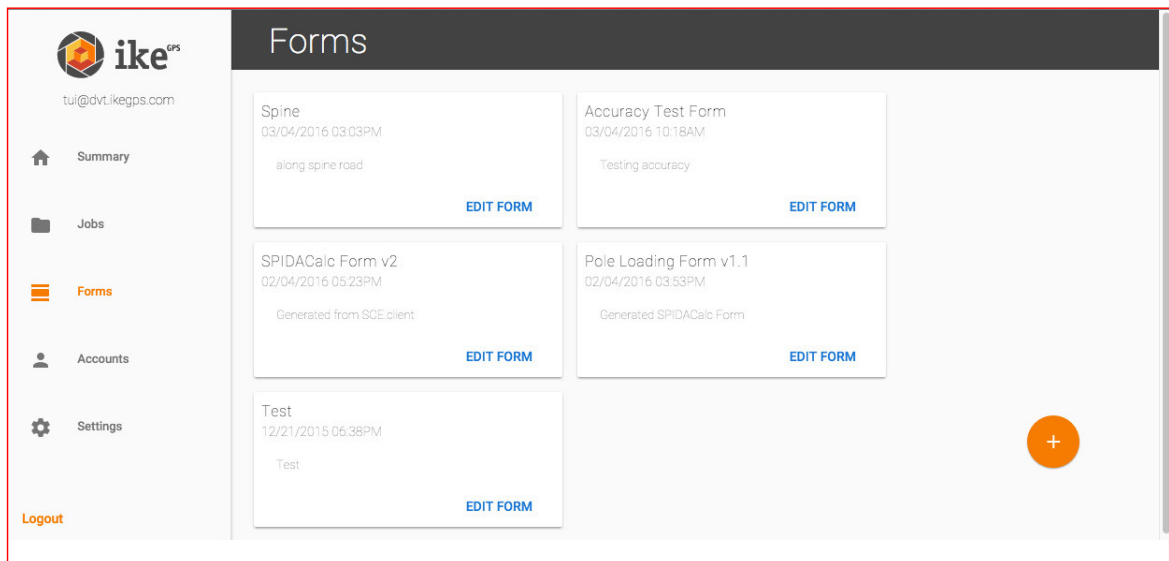
Now you see all the data collected for this feature, such as

- Pole ID
- Location data
- True Size capture
- Sub-forms

This data is shaped by form creation and field data collection. Therefore, it is very important to be mindful of requirements when creating forms, via the IKE Office Forms tab.

forms screen

The Forms screen shows all the available forms. From this screen you can add customizable forms to your account. To access the forms, click .

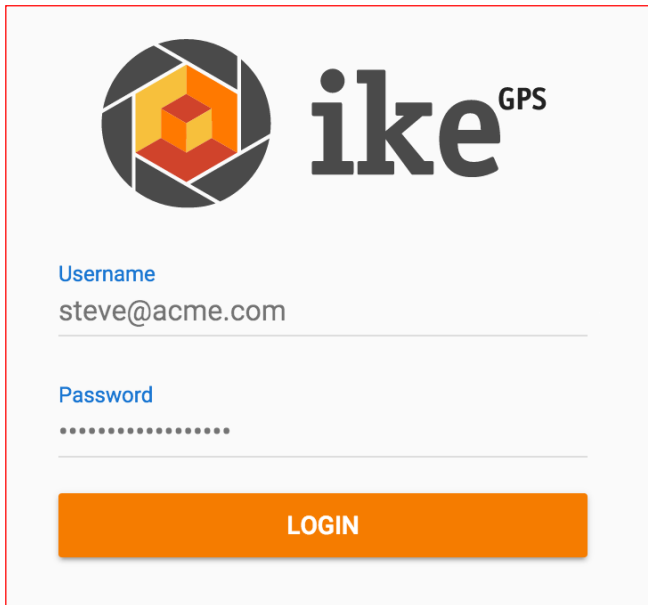


By selecting a form's edit button, the Form menu appears, and you can

Test a new form against a pole, to ensure you have all the necessary information for pole-loading analysis.

logging in

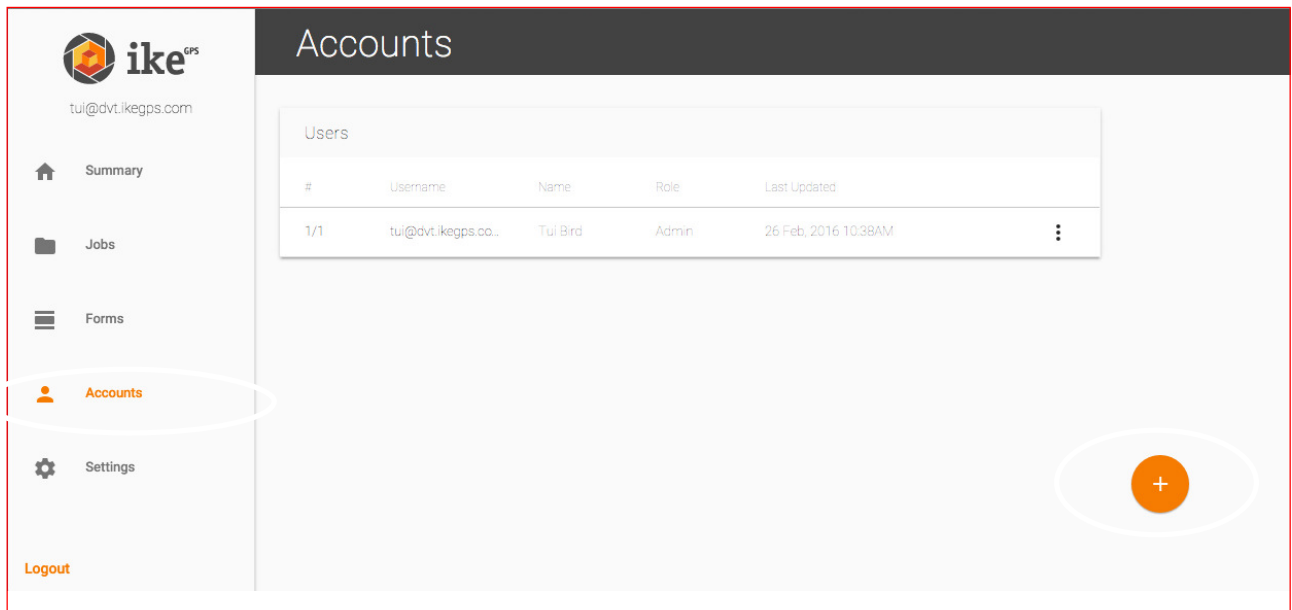
When signing into IKE Office for the first time use the admin login and password provided by ikeGPS. Enter these details, then click



The login form features the IKE GPS logo at the top left, which consists of a stylized camera lens icon and the text 'ike^{GPS}'. Below the logo, there are two input fields: 'Username' with the value 'steve@acme.com' and 'Password' with masked characters. A large orange 'LOGIN' button is positioned at the bottom of the form.

managing accounts

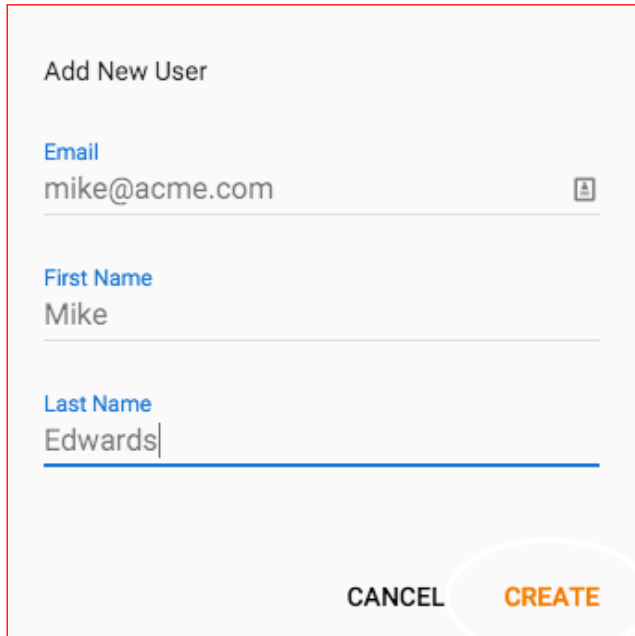
1. To add a new user, click on  then on .



The screenshot shows the 'Accounts' management page in the IKE GPS application. The left sidebar contains a navigation menu with items: Summary, Jobs, Forms, Accounts (highlighted with a white oval), and Settings. The main content area is titled 'Accounts' and displays a table of users. The table has columns for '#', 'Username', 'Name', 'Role', and 'Last Updated'. A single user is listed: '1/1', 'tui@dvt.ikegps.co...', 'Tui Bird', 'Admin', and '26 Feb, 2016 10:38AM'. A white oval highlights the 'Accounts' menu item in the sidebar, and another white oval highlights a large orange '+' button in the bottom right corner of the main content area, used for adding new users.

#	Username	Name	Role	Last Updated
1/1	tui@dvt.ikegps.co...	Tui Bird	Admin	26 Feb, 2016 10:38AM

2. Enter the user details, then click .



Add New User

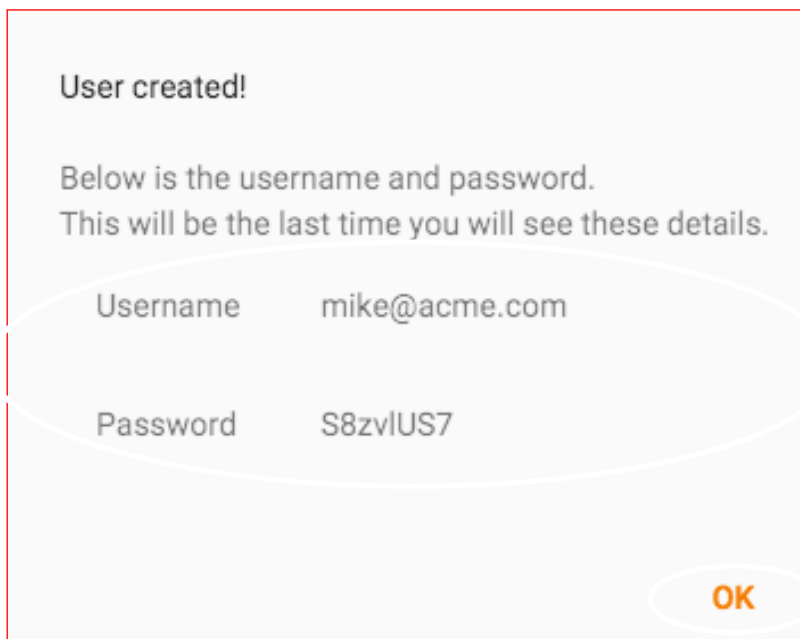
Email
mike@acme.com

First Name
Mike

Last Name
Edwards

CANCEL CREATE

3. When the confirmation message appears, copy the login details (username and password) and pass them on to the user. Click to close the window.




User created!



Below is the username and password.
This will be the last time you will see these details.

Username mike@acme.com

Password S8zvlUS7

OK

To delete a user or reset a password, click the More icon () to the right of the account and select the option required.

Users					
#	Username	Name	Role	Last Updated	
1/2	mike@acme.com	Mike Edwards	User	14 Dec, 2015 4:08PM	
2/2	steve@acme.com	Steve Smith	Admin	14 Dec, 2015 3:55PM	

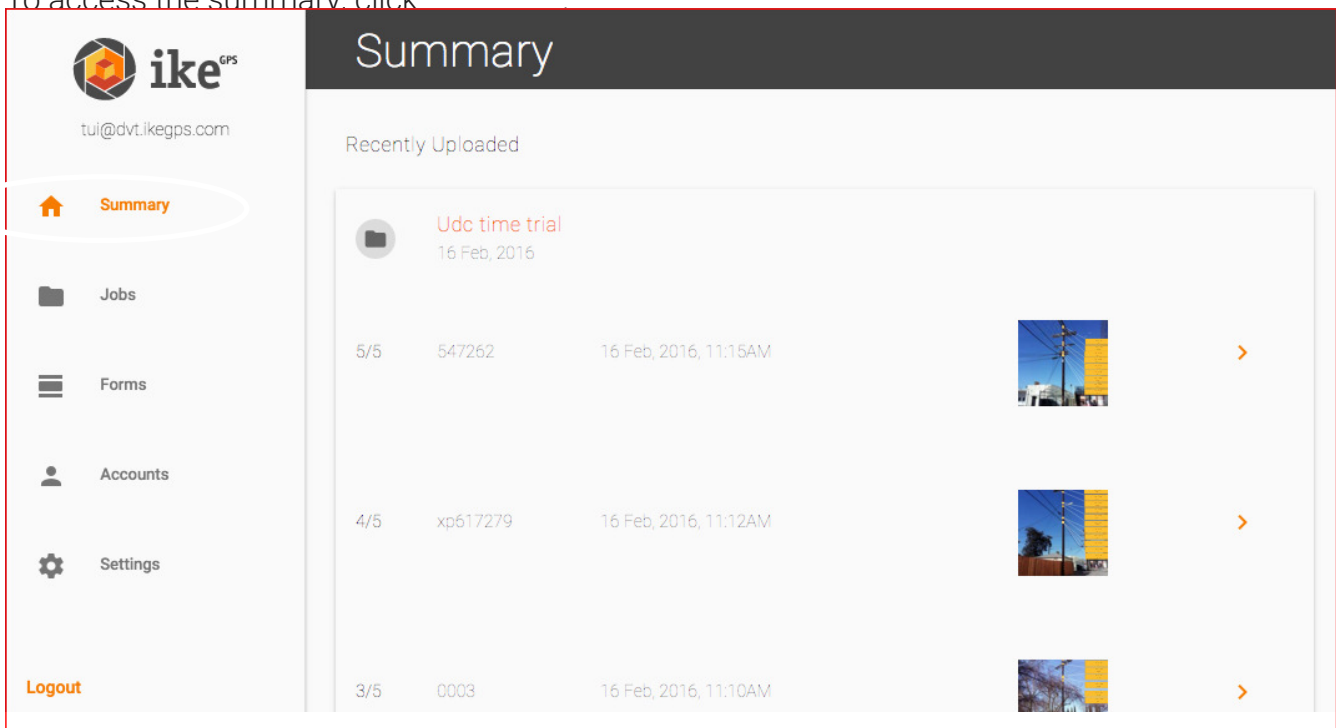
Delete User

Reset Password

summary screen

The summary screen shows the most recently uploaded collections and jobs. From here you can navigate to an individual job or collection.

To access the summary, click






ike^{GPS}
tui@dvt.ikegps.com



Summary

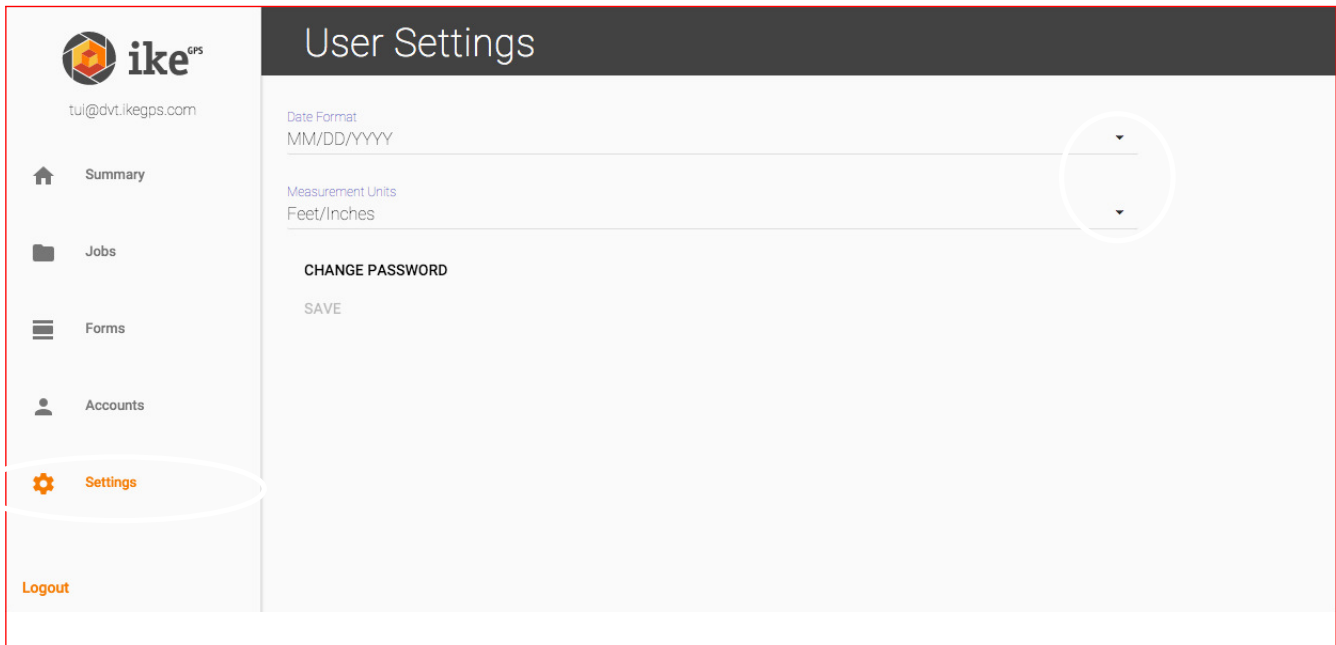
Recently Uploaded

Udc time trial
16 Feb, 2016

5/5	547262	16 Feb, 2016, 11:15AM		>
4/5	xp617279	16 Feb, 2016, 11:12AM		>
3/5	0003	16 Feb, 2016, 11:10AM		>

customising the date format and measurement units

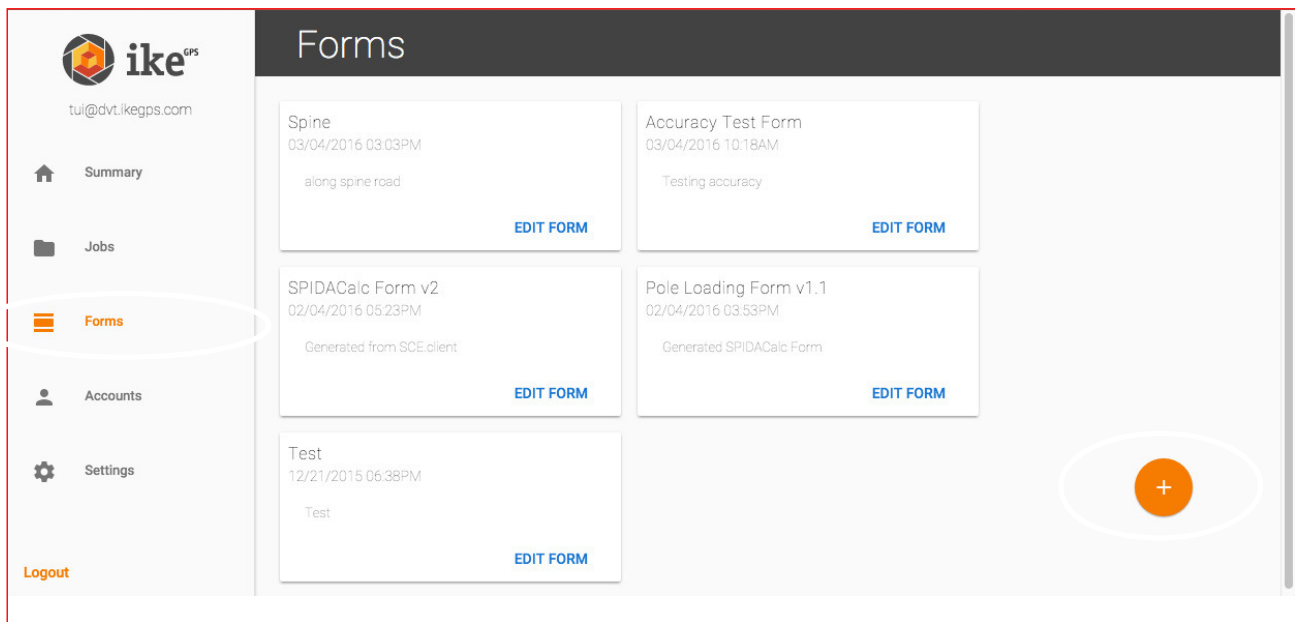
You can change the date format and measurement units. To do this, click  then click  to select the preferred date format and/or measurement units.



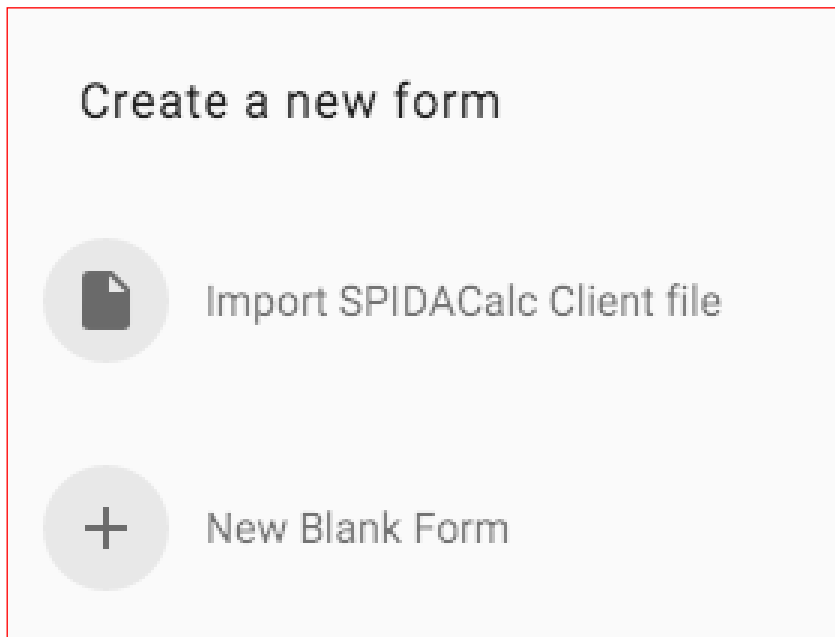
creating a form

Note: It is important to set up the Internet connection to access your forms, especially the first time using the network.

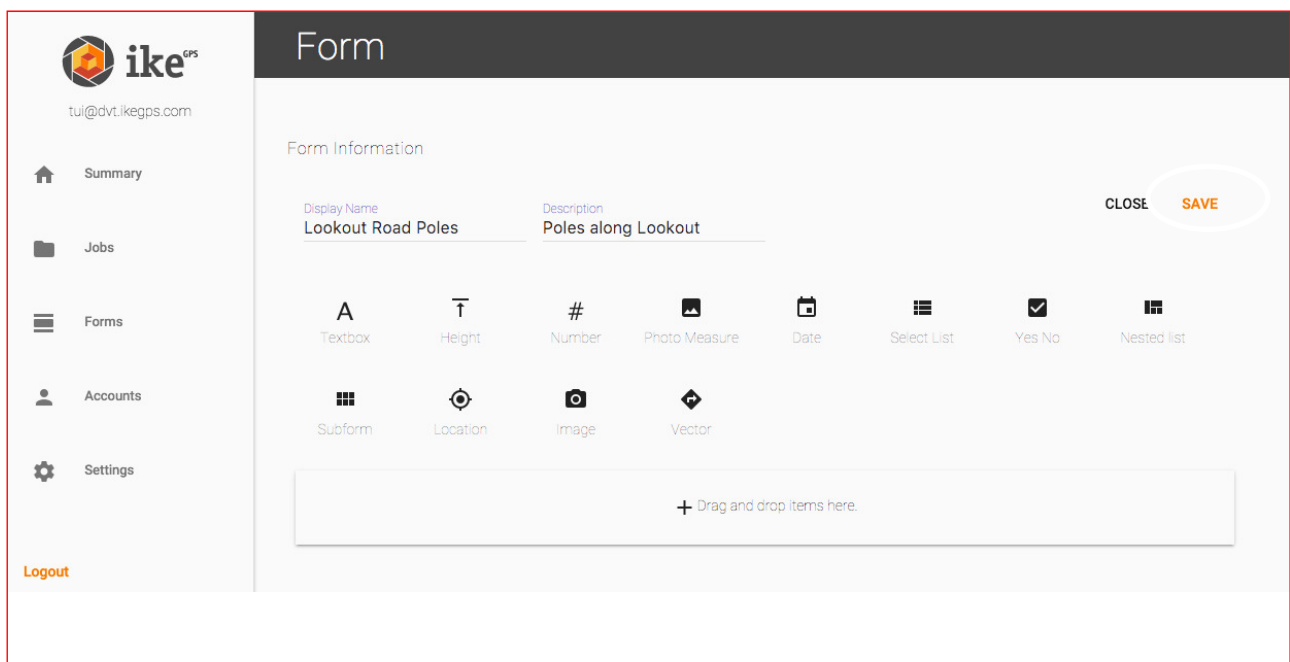
1. To create a form, click on  then on .



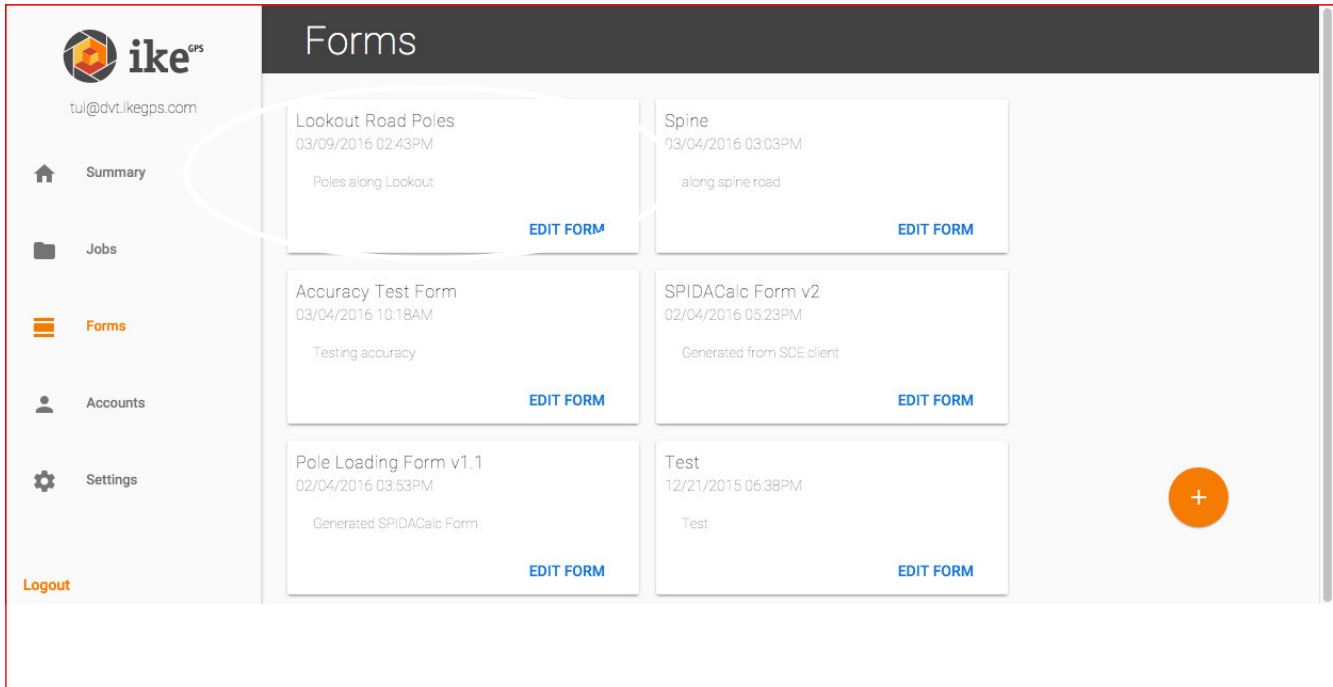
2. Select the type of form you want to create.
If you have a client.json file from ikeGPS, you can select to create a form specifically to be used with SPIDACalc.
To create a form from scratch, select



3. When the form is created, click to make the form available for download onto the IKE device.

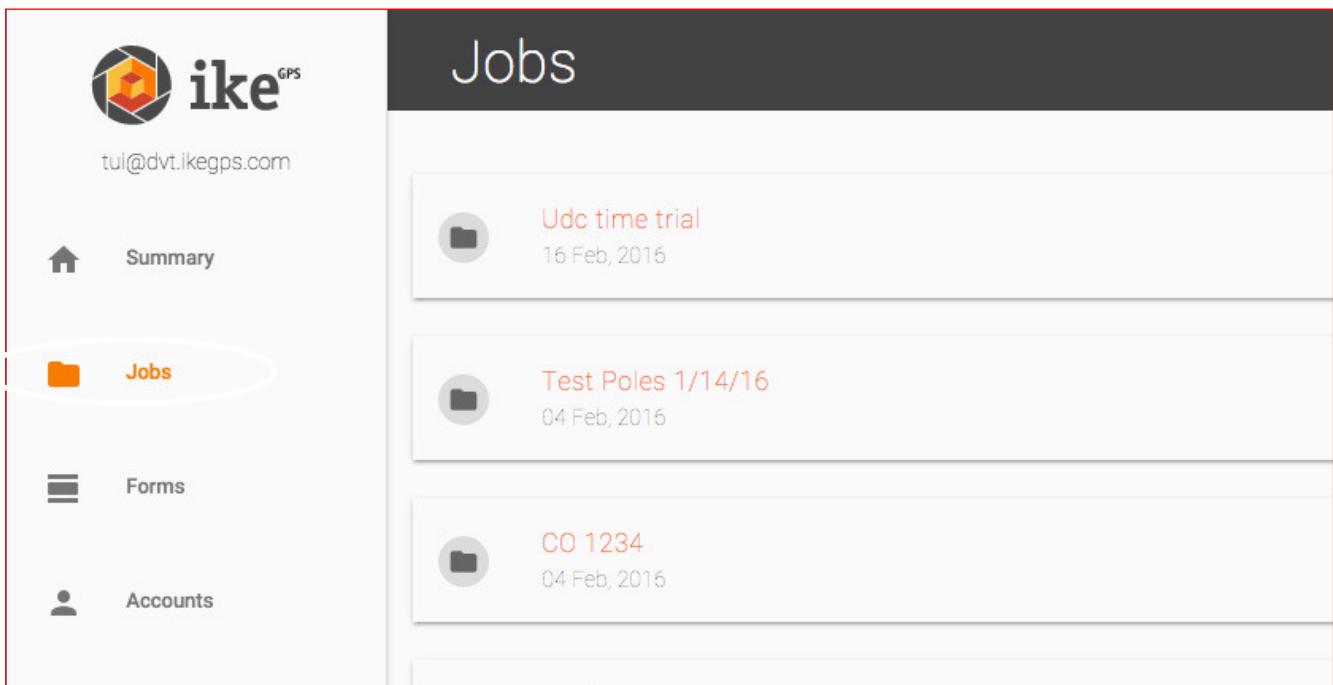


The created forms are displayed as shown below.






jobs and collections

To display all the jobs collected for your organisation, click [Jobs](#).




Selecting a job shows all of the collections for that job.

The screenshot shows the ikeGPS web application interface. On the left is a navigation sidebar with the ikeGPS logo, user email 'tui@dvt.ikegps.com', and menu items: Summary, Jobs, Forms, Accounts, Settings, and Logout. The main content area is titled 'CO 1234' and features a search bar with 'Filter by' and a dropdown arrow. Below this is a table listing collections for job 'CO 1234':

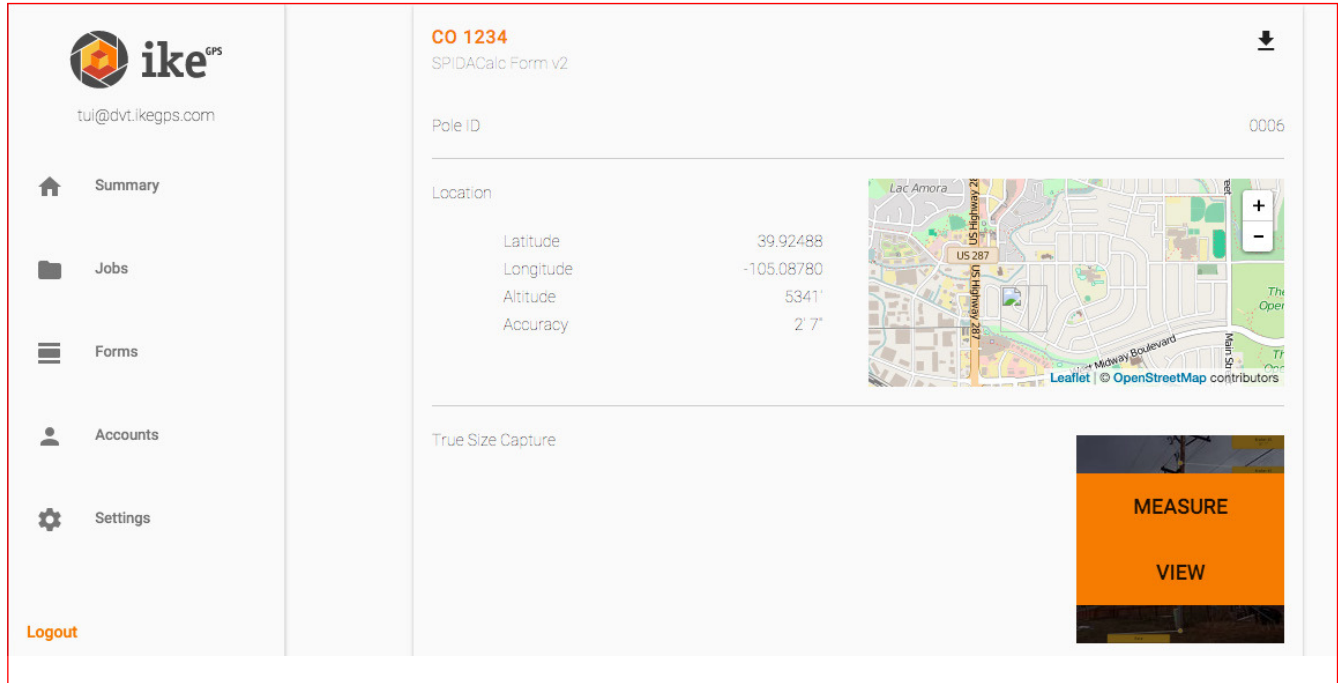
<input type="checkbox"/>	#	↑ Date	ID	Photo
<input type="checkbox"/>	1/39	21 Jan, 2016 11:40AM	A0871345	
<input type="checkbox"/>	2/39	21 Jan, 2016 11:40AM	A0871346	
<input type="checkbox"/>	3/39	21 Jan, 2016 11:38AM	A0871348	

Selecting an individual collection () will show all of the data collected on the form.

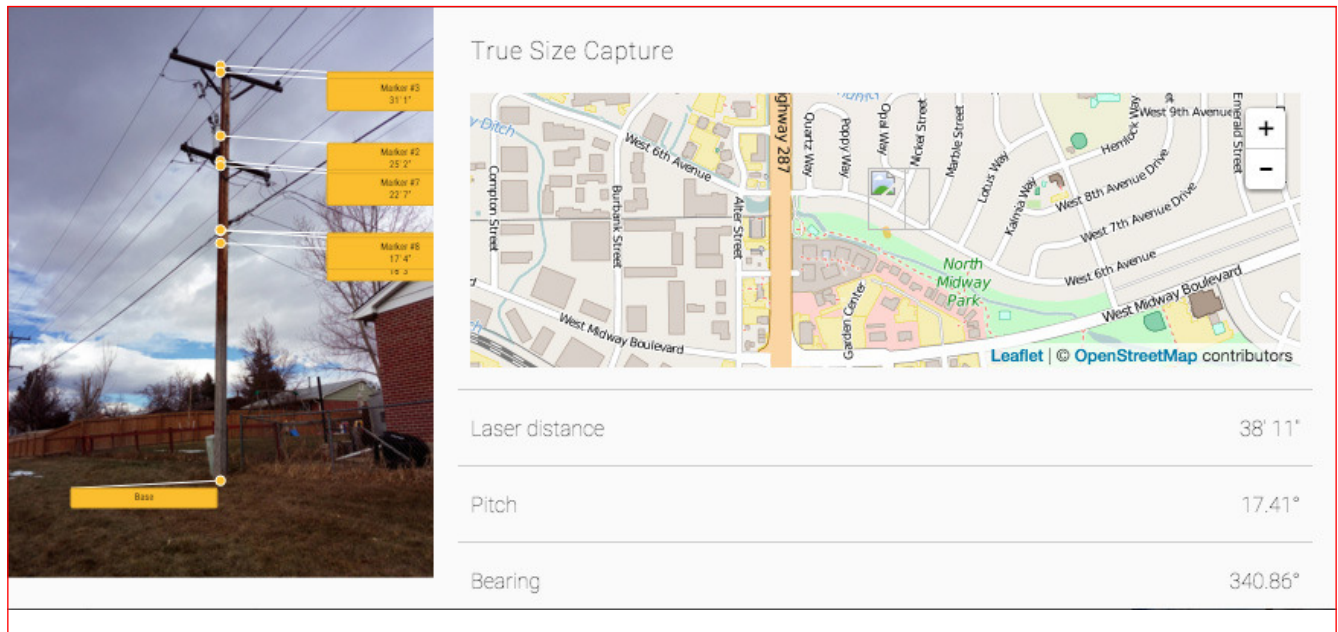
The screenshot shows the ikeGPS web application interface for a specific collection. The sidebar is identical to the previous screenshot. The main content area is titled 'Collection 34/39'. It displays the following information:

- CO 1234** (with a download icon)
- SPIDACalc Form v2
- Pole ID: 0006
- Location: A map showing the collection site with a red pin. The map includes labels for 'North Midway Park' and various streets like 'West 6th Avenue' and 'Quartz Way'.
- Location details:
 - Latitude: 39.92488
 - Longitude: -105.08780
 - Altitude: 5341'
 - Accuracy: 2.7'
- True Size Capture: 

Mousing over an image shows a menu that allows you to view or go to Photo Measure



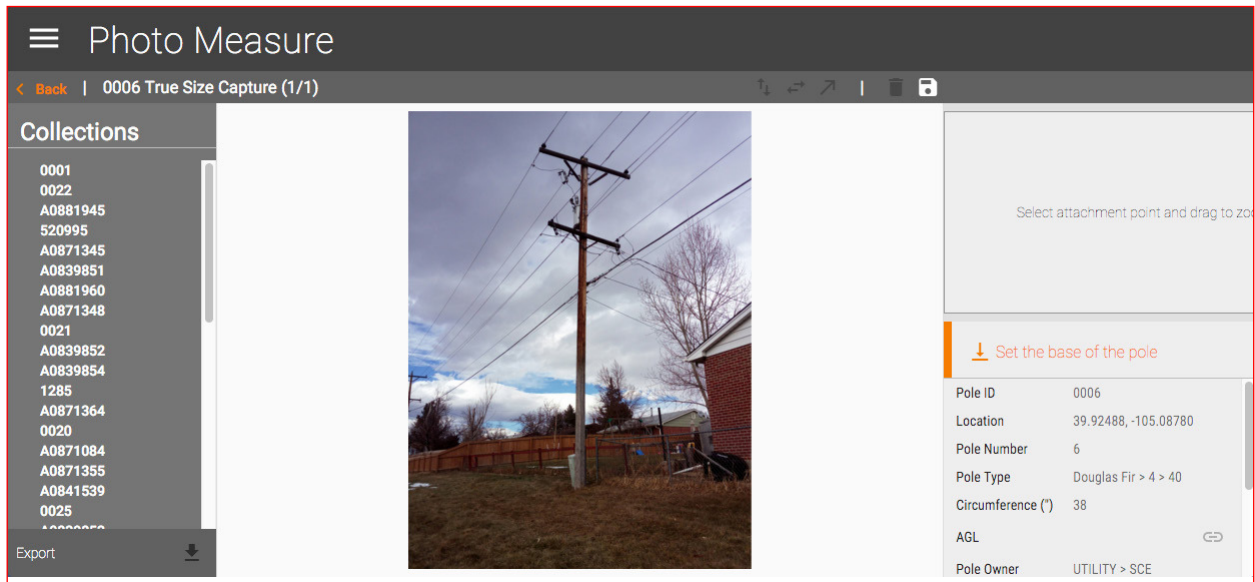
Selecting a view shows a summary of the capture, including the photo, location and measurement details.



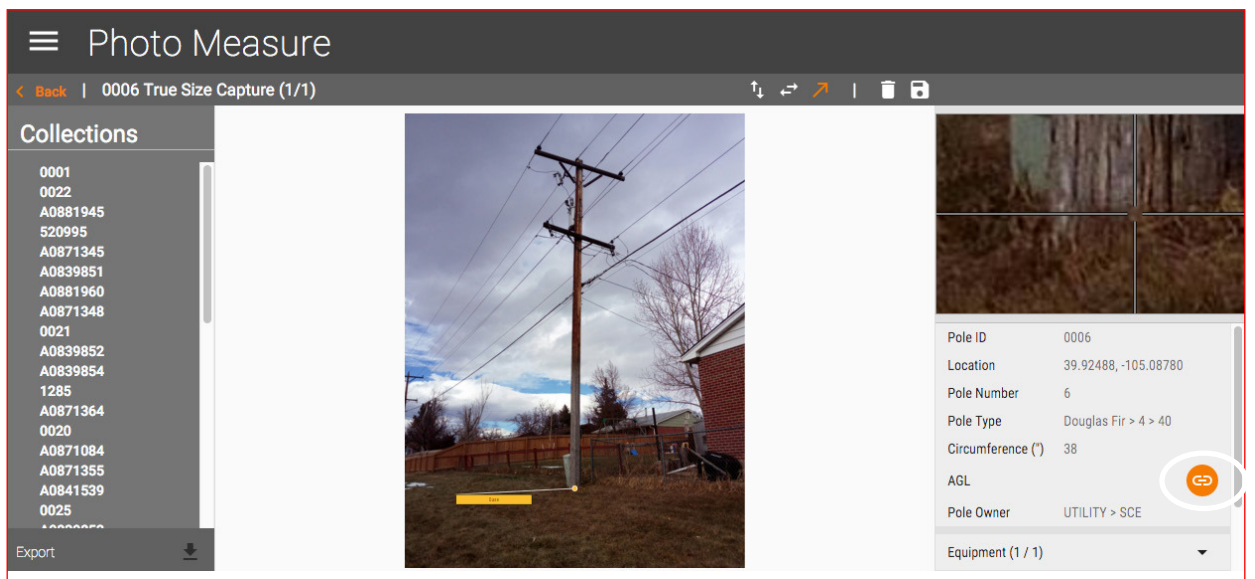
Click outside the image to close the image.

measuring from a photo

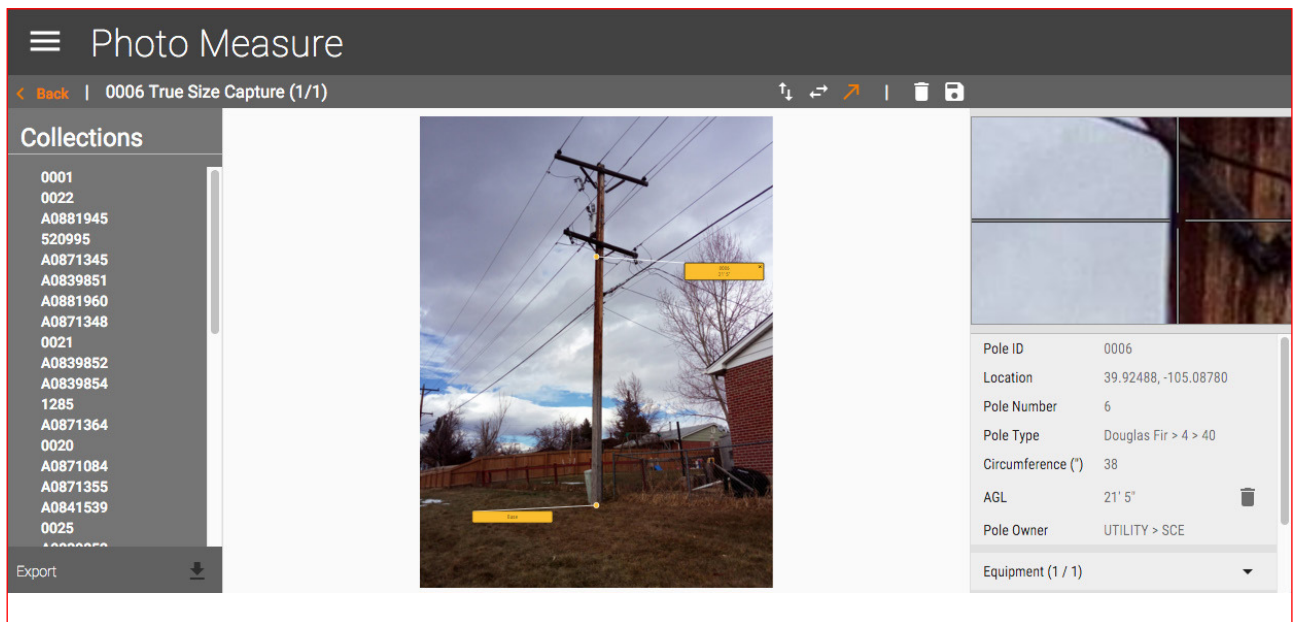
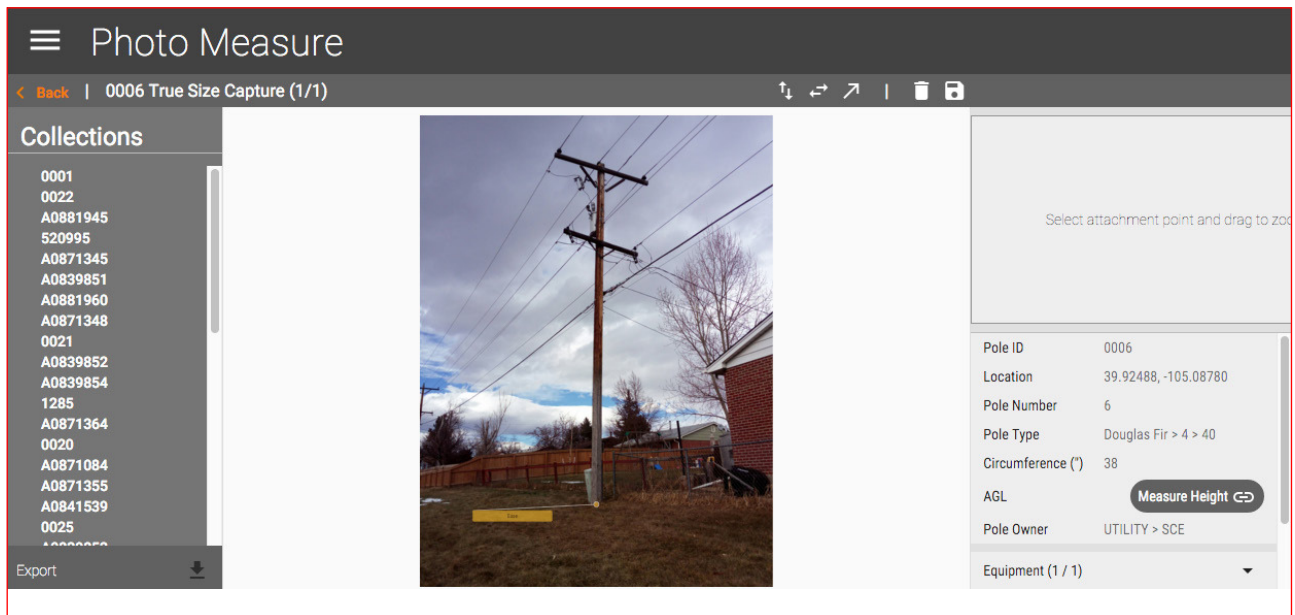
1. Set the base of the pole by clicking on the photo near the bottom of the pole.



2. Select the first orange link on the right.



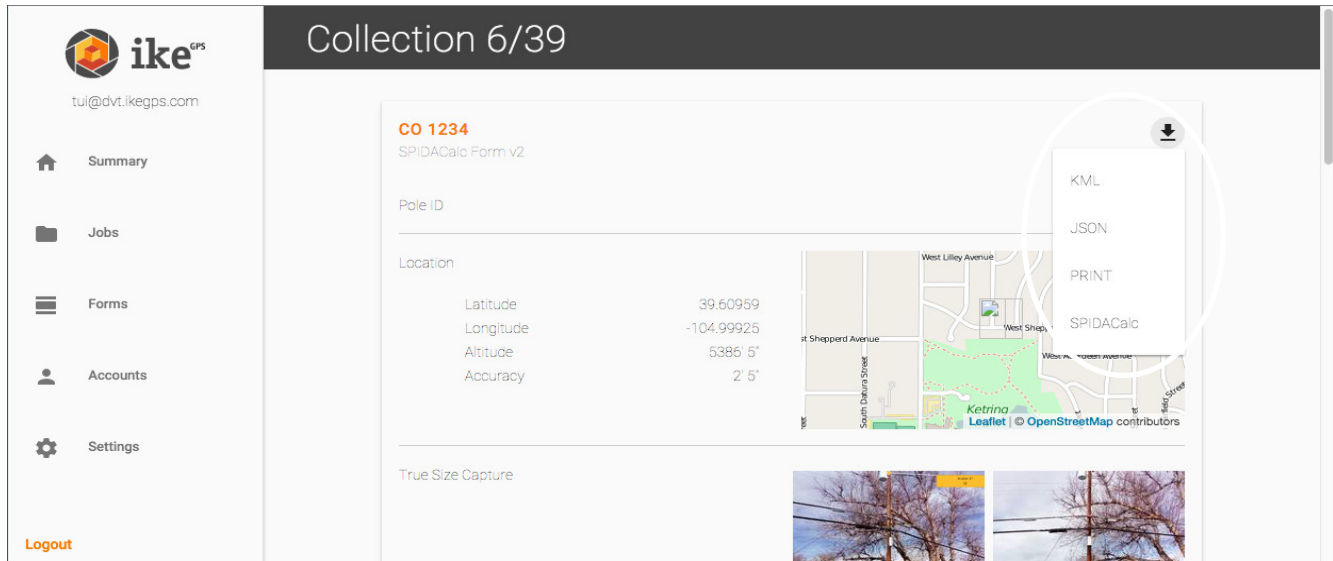
3. Click on the image to calculate the height for that field. Continue doing this for the other height fields in the form.



- For accurate placement, use the zoom window on the right for a closer view.
- To edit the name of the marker on photo, double click on it.
- To save your measurements, click [save icon].
- To go back to the collection screen, click [X icon]
- To delete all measurements on the photo, click [trashcan icon].

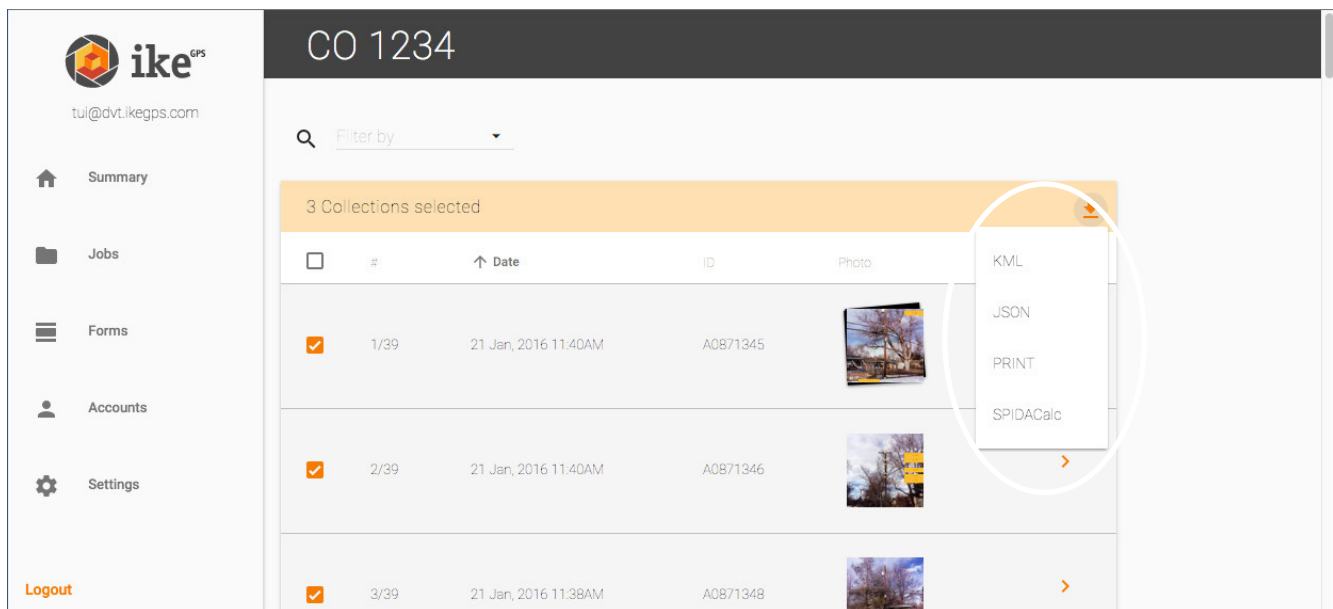
exporting

An individual collection can be exported to KML, JSON, Print (PDF) or to SPIDACalc format.





The screenshot shows the 'Collection 6/39' page in the IKE GPS application. The left sidebar contains navigation options: Summary, Jobs, Forms, Accounts, and Settings, along with a Logout button. The main content area displays the collection details for 'CO 1234', including the form type 'SPIDACalc Form v2', Pole ID, and Location coordinates (Latitude: 39.60959, Longitude: -104.99925, Altitude: 5386' 5", Accuracy: 2' 5"). A map shows the location with a red dashed line indicating the collection area. Below the map are two photographs of utility poles. A dropdown menu is open, showing the following options: KML, JSON, PRINT, and SPIDACalc.

Multiple collections can also be exported, by checkmarking them.



The screenshot shows the 'CO 1234' page in the IKE GPS application, displaying a list of collections. The left sidebar is the same as in the previous screenshot. The main content area shows a search bar and a table with 3 collections selected. The table has columns for selection, ID, Date, and Photo. A dropdown menu is open, showing the following options: KML, JSON, PRINT, and SPIDACalc.

<input type="checkbox"/>	#	↑ Date	ID	Photo
<input checked="" type="checkbox"/>	1/39	21 Jan, 2016 11:40AM	A0871345	
<input checked="" type="checkbox"/>	2/39	21 Jan, 2016 11:40AM	A0871346	
<input checked="" type="checkbox"/>	3/39	21 Jan, 2016 11:38AM	A0871348	