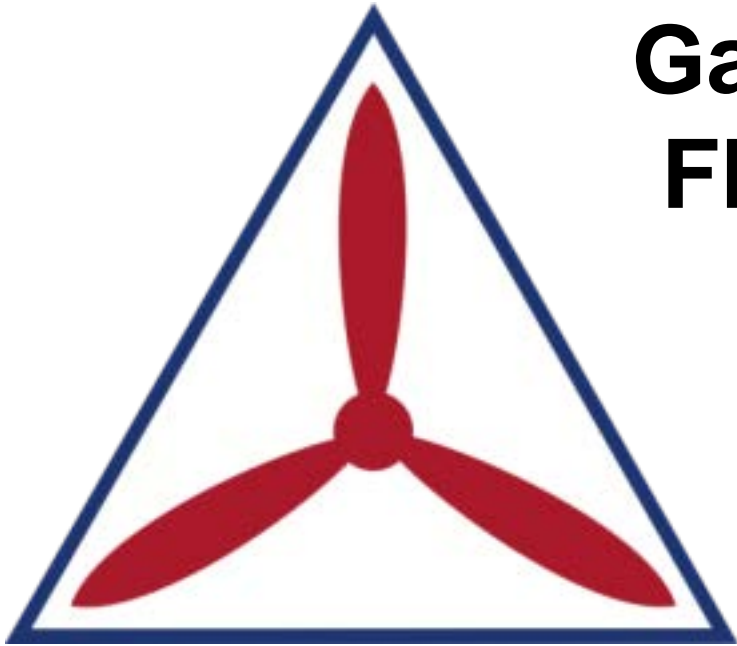
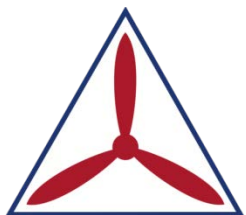


Civil Air Patrol



Garmin Virb Camera Kit & FEMA Uploader Training

Lt Col Eric Templeton, CAP
&
Mr. John Desmarais

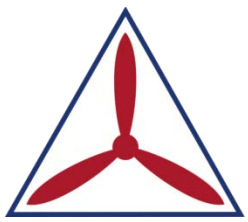


BUILDING CAP'S TEAM

... FOR TODAY AND TOMORROW

Post Disaster Photography for Rapid Damage Evaluation

External Mount Camera Nadir Photography



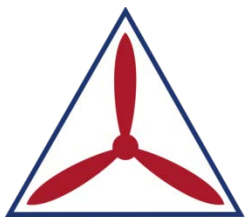
Webinar Presenters



John Desmarais
Director of Operations
National Headquarters

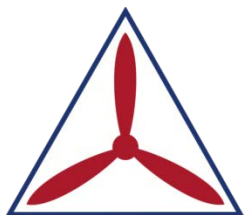


Lt Col Eric Templeton
Mission Aircrew School Commandant
National Emergency Services Academy



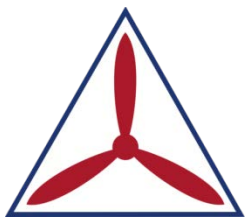
Webinar Rules of Engagement

- ✂ Members in the field will be in listen only mode. We have several hundred members signed up, so having everyone with an open microphone is not supportable.
- ✂ We will try to answer questions throughout the webinar though. Just type your questions, and we will either answer you directly via text or provide a voice answer to your question.
- ✂ The webinar itself, questions, and chat log are being recorded, so please remain respectful.



Garmin Virb Kit Deployment

- ✂ CAP will be deploying 142 units by the end of November and then another 233 in early January once all of the remaining parts arrive.
- ✂ We will be making an even distribution across the aircraft fleet.
- ✂ The goal is to have these kits deployed to 68% of the fleet by the end of January
- ✂ Prior to shipment, NHQ will coordinate with each Wing Commander to determine where these resources will be assigned.
- ✂ Do not contact NHQ requesting one for your unit. Please work with your command staff.



Disaster Photography

└ Project Definition

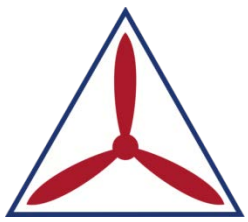
└ Project Goals

└ Customer Use of Imagery

└ Equipment – Garmin Virb Kits

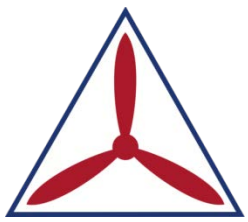
└ Application

└ State of Testing / Next Steps



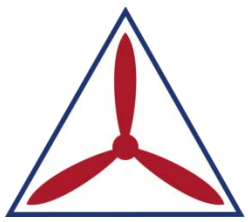
Project Definition

- ✂ Fast Delivery of Imagery
- ✂ Sufficient Detail for Initial Damage Assessment
- ✂ Simple to use system of Camera's and mounts
- ✂ Ability for use with all Disaster Types



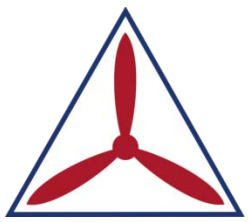
Disaster Photography

- Project Definition
- Project Goals**
- Customer Use of Imagery
- Equipment – Garmin Virb Kits
- Application
- State of Testing / Next Steps



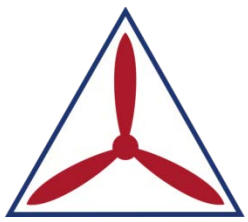
Project Goals

- ✂ Stand alone Application for loading imagery
- ✂ Web site for advanced support of imagery loading
- ✂ Support for Geo-Tagged
- ✂ Support for Non Geo-Tagged images with NEMA track log file
- ✂ Simple kits including a camera and mounts to be issued to wings



Disaster Photography

- └ Project Definition
- └ Project Goals
- └ **Customer Use of Imagery**
- └ Equipment – Garmin Virb Kits
- └ Application
- └ State of Testing / Next Steps



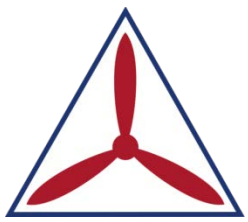
Customer Use of Imagery

✂ Fast online evaluation of damage

- Wind, Flood, Fire Earthquake

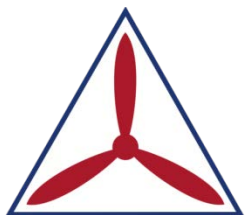
✂ Ability to verify damage levels

- Destroyed / Leveled
- Major Damage
- Minor Damage
- No Apparent Damage



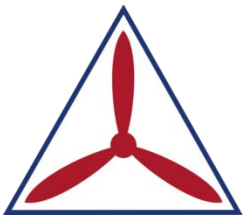
Customer Use of Imagery

- ✂ The imagery will provide a fast evaluation to determine if the homeowner should receive emergency payment for shelter, food and clothing.
- ✂ The imagery is not for the determination of payment on the structure / automobiles etc.
- ✂ Crowd Sourcing (lots of online available people) to review and grade the images



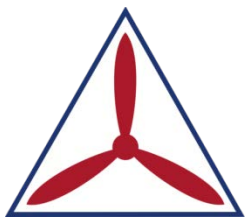
Flight Profile

- ✂ 2500 AGL
- ✂ 100 KTS Ground Speed
- ✂ Suggest 1 notch of flaps for wing level flight
- ✂ Camera at 10 Second intervals
- ✂ 1/2 mile grid or “line to line” spacing
 - As Briefed

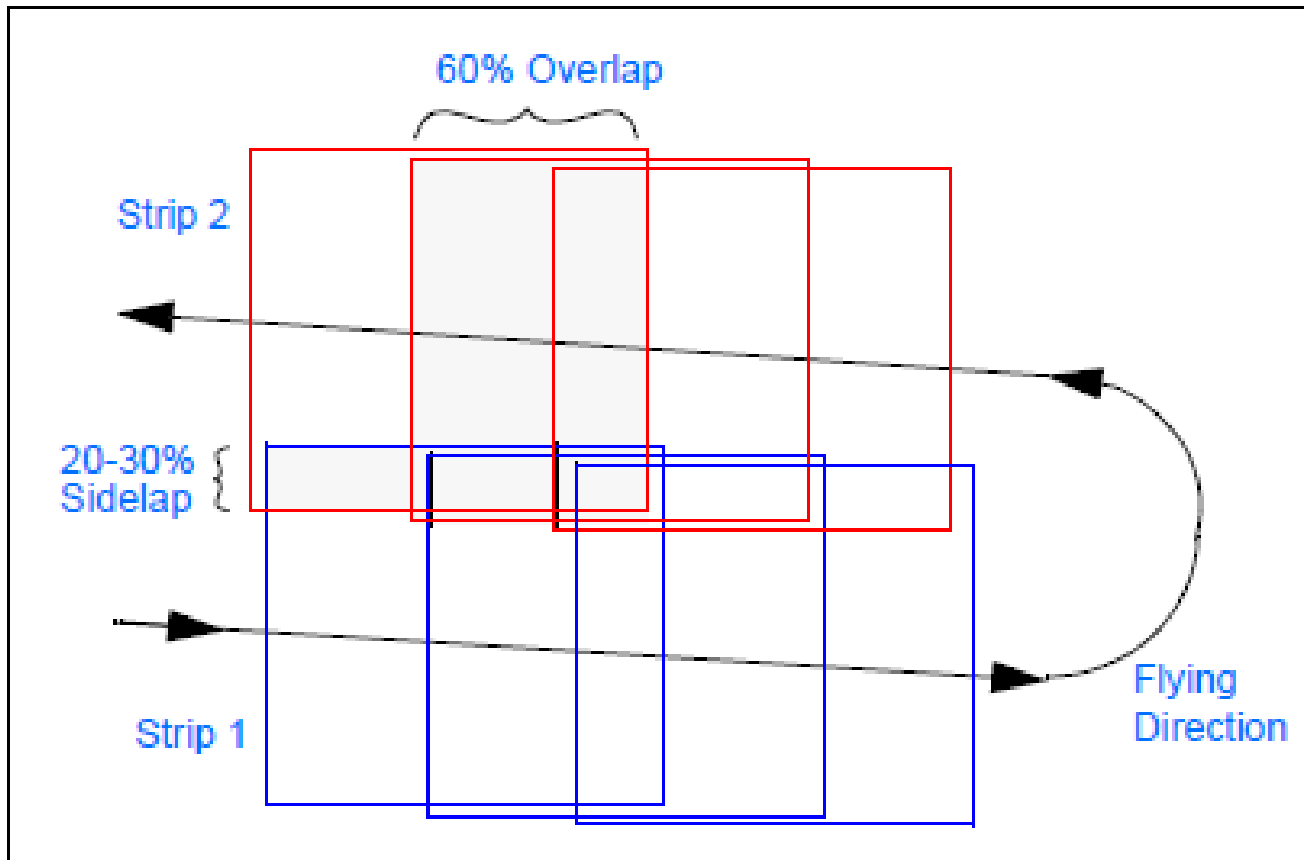


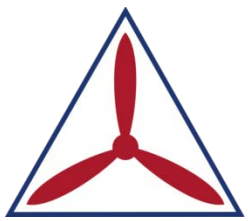
Flight Profile - Nadir



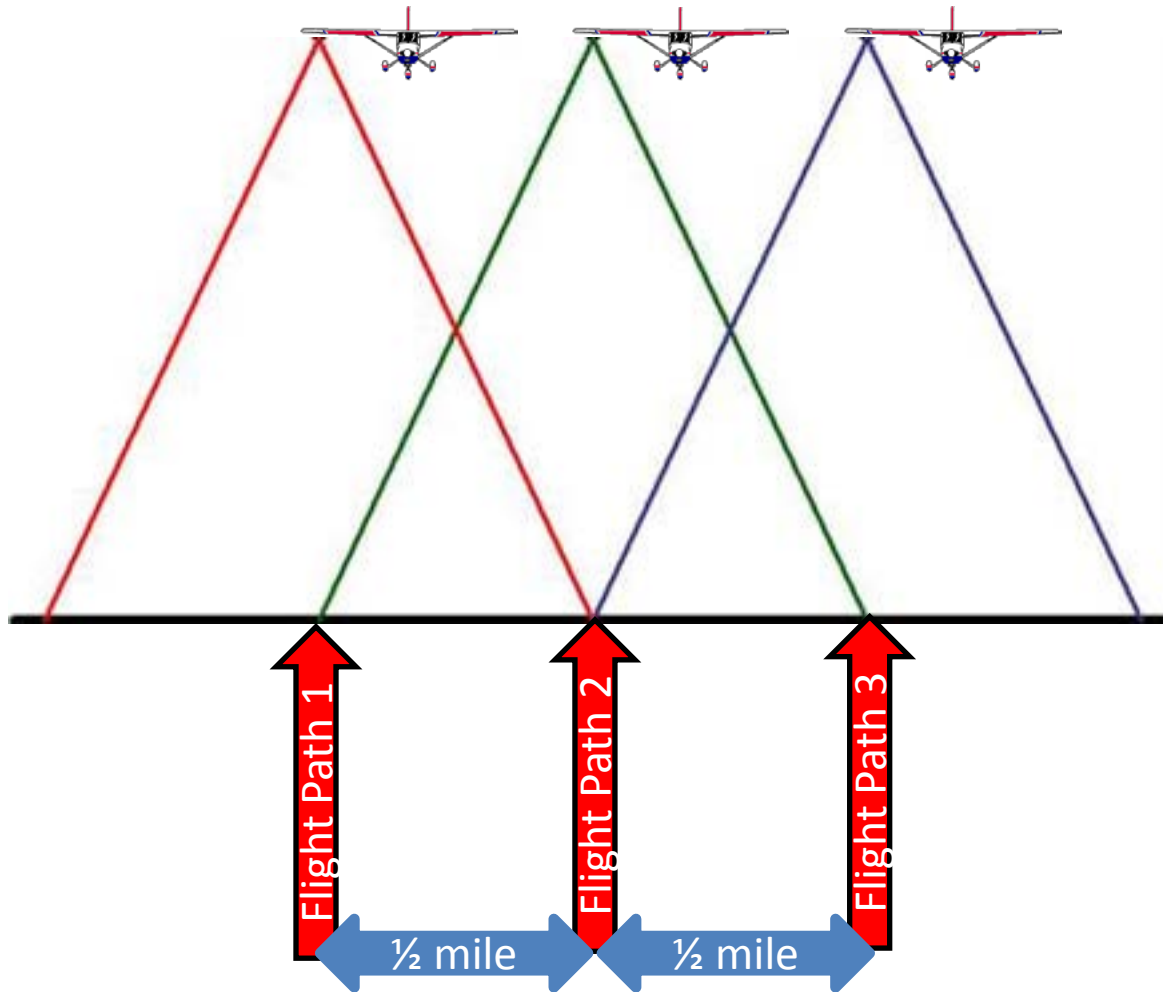


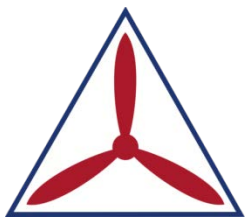
Flight Profile - Nadir





Flight Profile - Nadir





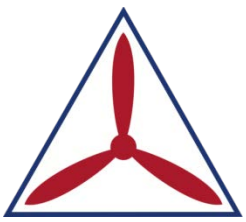
Flight Profile

✂ Flight Profile

- 2500 AGL, 100 KTS, $\frac{1}{2}$ mile grid
- Camera at 10 Second intervals

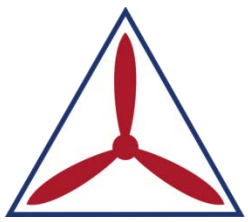
✂ Flight Profile Yields

- 2500 AGL, 100 KTS, \Rightarrow ~57% Endlap
 - Endlap is overlap ALONG the flight path.
- $\frac{1}{2}$ mile grid (line to line) \Rightarrow ~100% Sidelap
 - Sidelap is overlap flight path to flight path



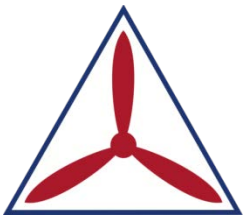
Disaster Photography

- Project Definition
- Project Goals
- Customer Use of Imagery
- Equipment – Garmin Virb Kits**
- Application
- State of Testing / Next Steps



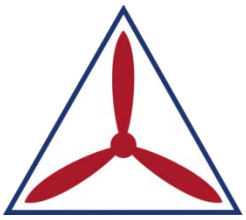
Equipment – Garmin Virb Kits

- ✂ Garmin Virb Elite
- ✂ Additional mounting pads & batteries, Memory card (64GB), USB charger, dive case.
- ✂ Samsung Galaxy Tab 4
- ✂ Cover
- ✂ Pelican Case
- ✂ Accessories
- ✂ Manual(s)



Equipment – Garmin Virb Kit





Garmin Virb Kit - Accessories



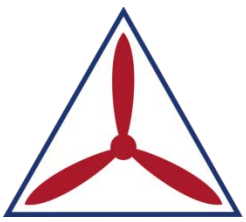
USB Power



Basic Accessories

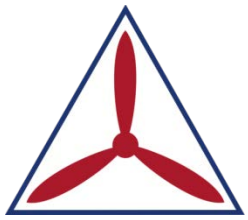


Extra Mounting Pads

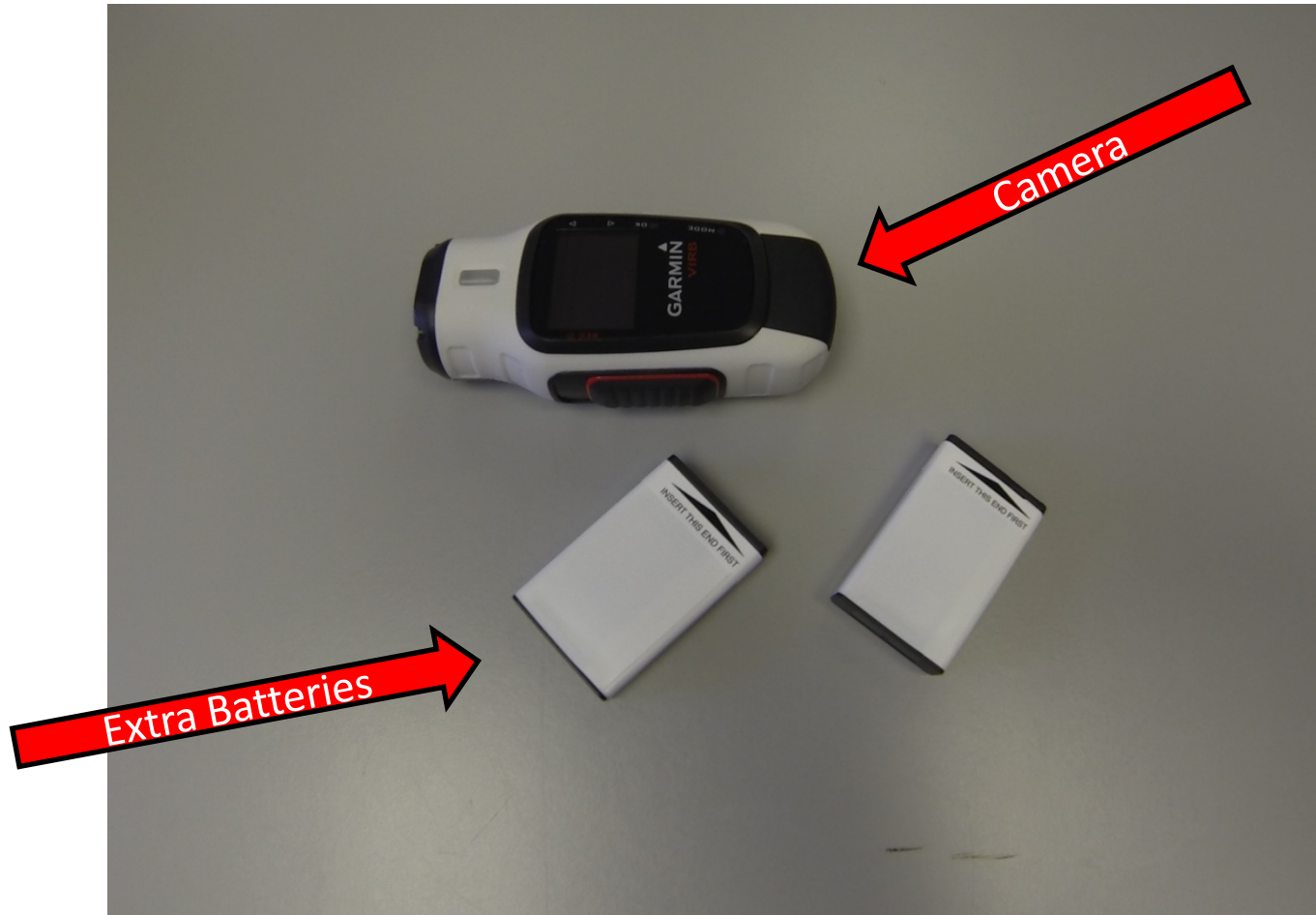


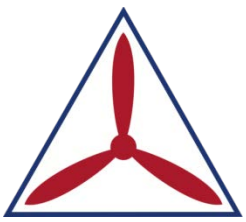
Garmin Virb Kit - Camera



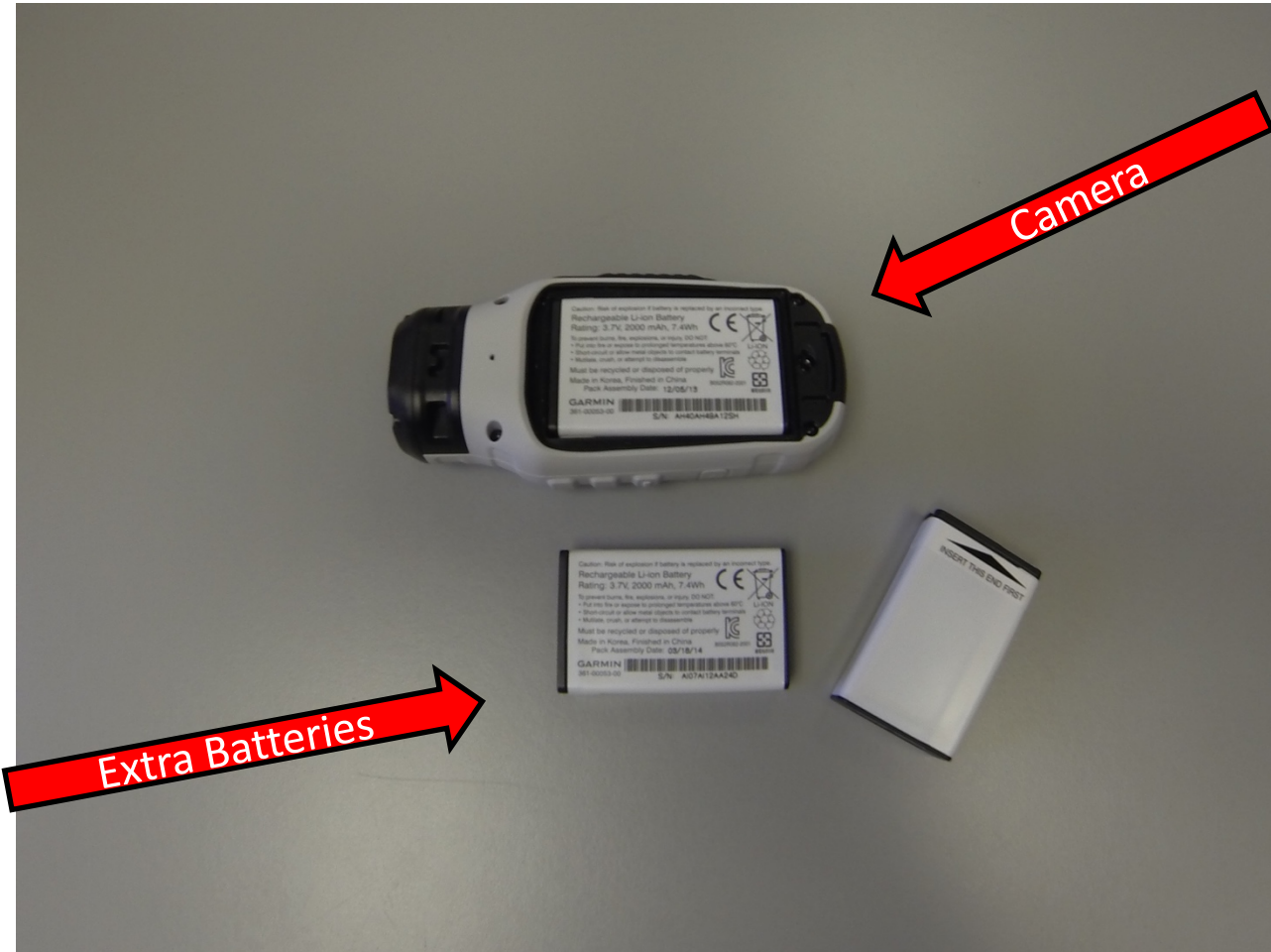


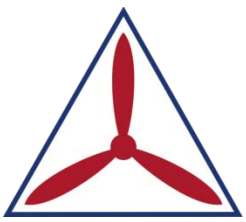
Garmin Virb Kit - Camera



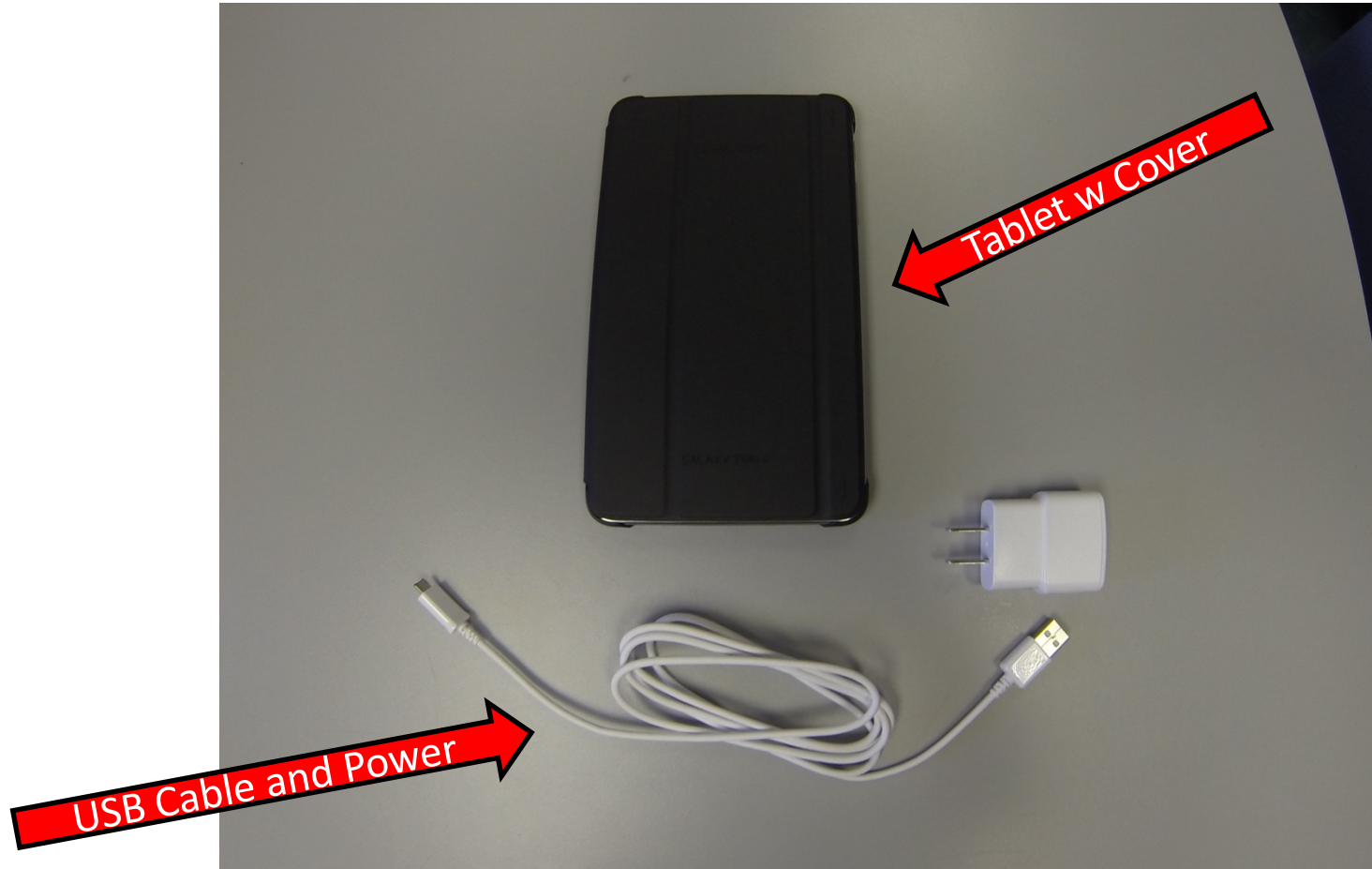


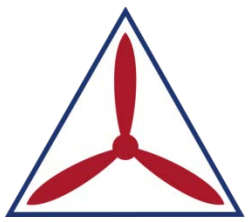
Garmin Virb Kit - Camera





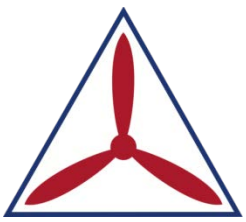
Garmin Virb Kit - Tablet





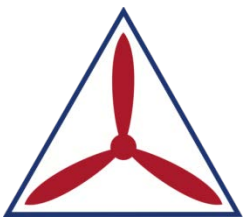
Disaster Photography

- └ Project Definition
- └ Project Goals
- └ Customer Use of Imagery
- └ **Equipment – Garmin Virb Kits**
 - **Samsung Tablet**
- └ Application
- └ State of Testing / Next Steps

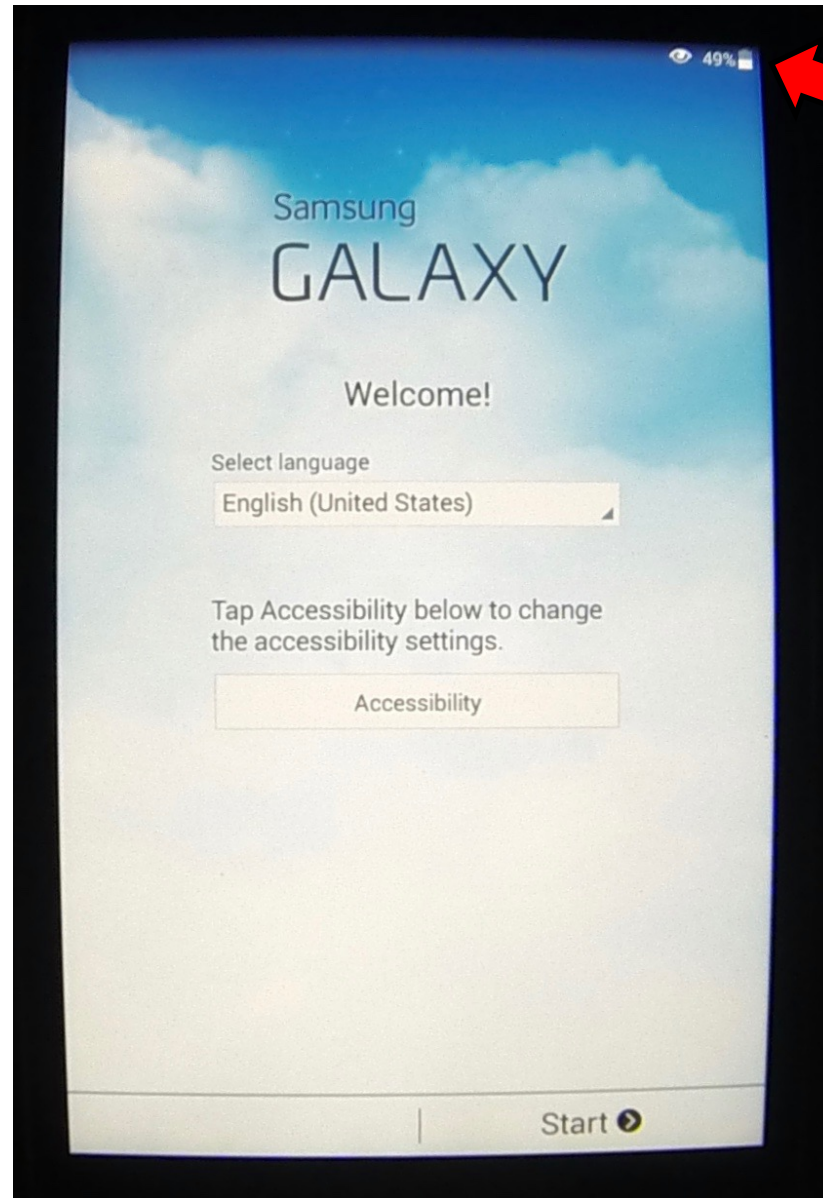


Garmin Virb Kit - Tablet

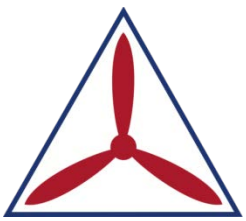




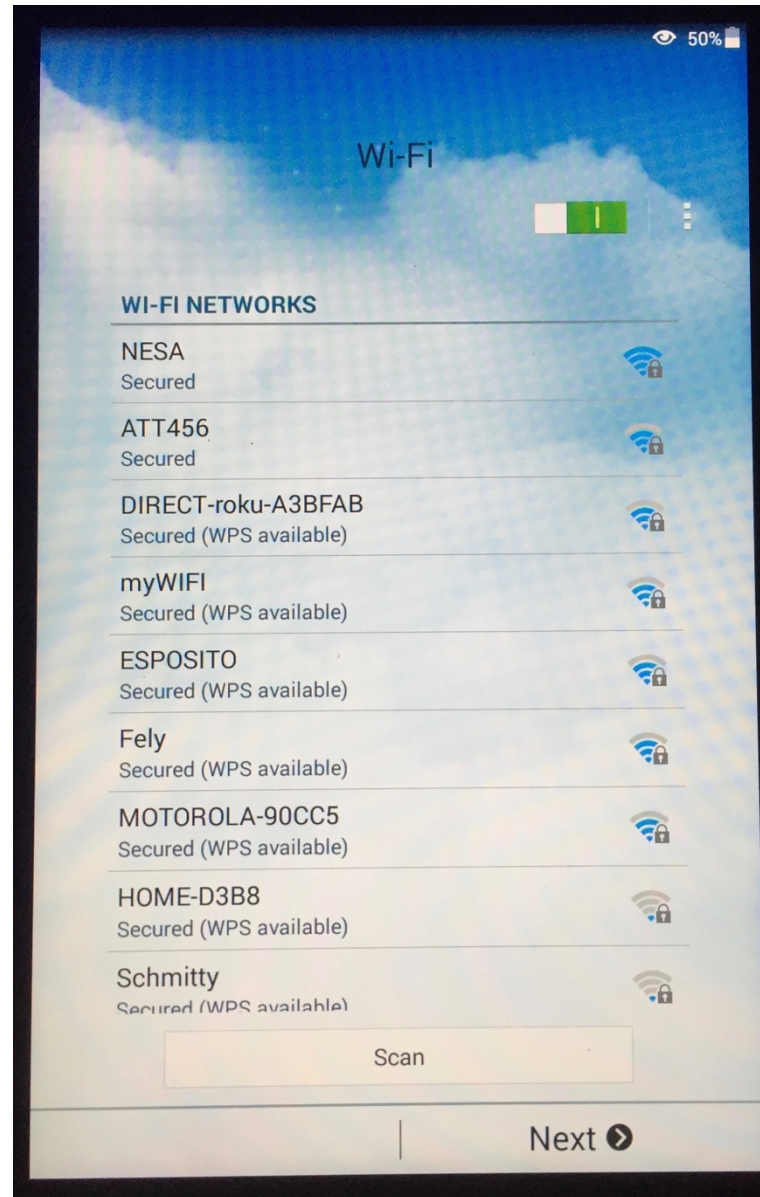
Garmin Virb Kit - Tablet

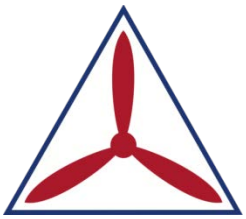


Power Level

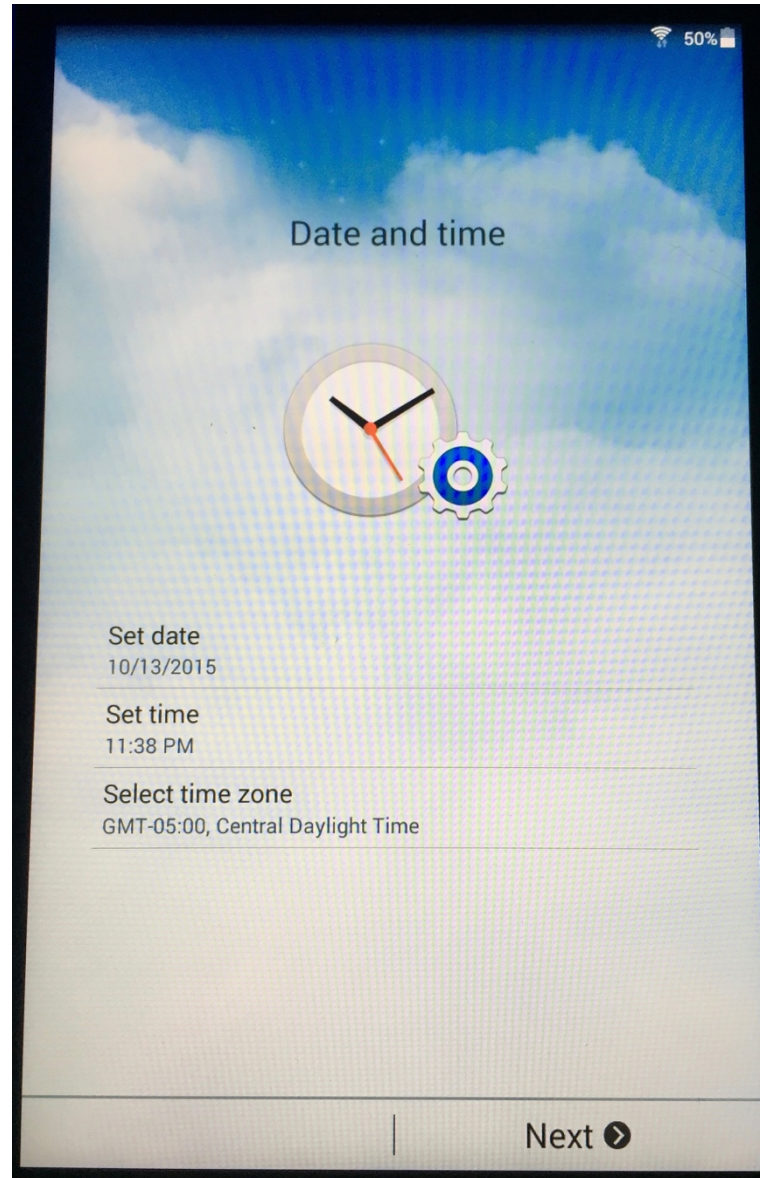


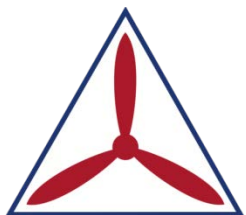
Garmin Virb Kit - Tablet





Garmin Virb Kit - Tablet





Garmin Virb Kit - Tablet

50%

EULA & Diagnostic Data

End User License Agreement for Software

IMPORTANT. READ CAREFULLY: This End User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and Samsung Electronics Co., Ltd. ("Samsung") for software, owned by Samsung and its affiliated companies and its third party suppliers and licensors, that accompanies this EULA, which includes computer software and may include associated media, printed materials, "online" or electronic documentation in connection with your use of this device ("Software").

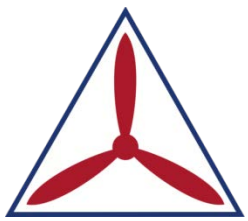
This device requires the use of preloaded software in its normal operation. BY USING THE DEVICE OR ITS PRELOADED SOFTWARE, YOU ACCEPT THE TERMS OF THIS EULA. IF YOU DO NOT ACCEPT THESE TERMS. DO NOT USE THE DEVICE OR THE

☒ I understand and agree to the terms and conditions above.

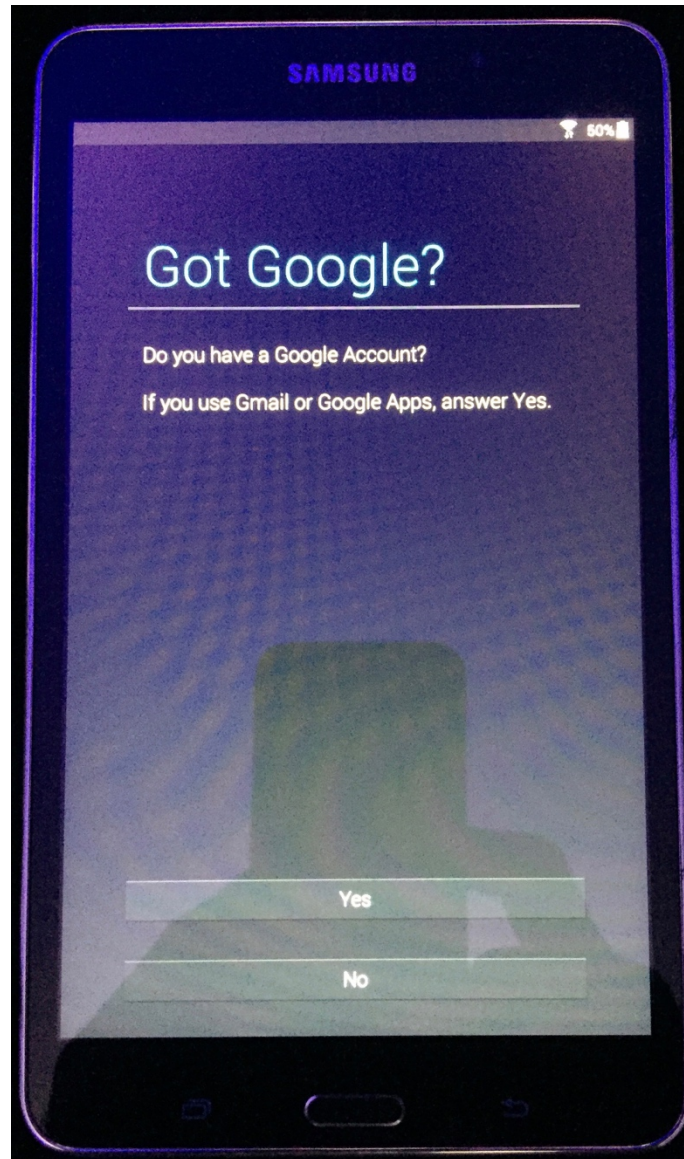
You agree to provide Samsung the error log data from any Software Update failure your device experiences. This will assist Samsung to improve and enhance Samsung's Software Update process and ultimately help you keep your device properly updated.

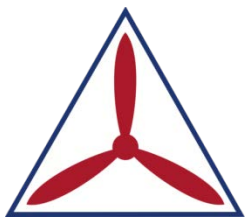
☒ Yes
☐ No thanks

Next ➔

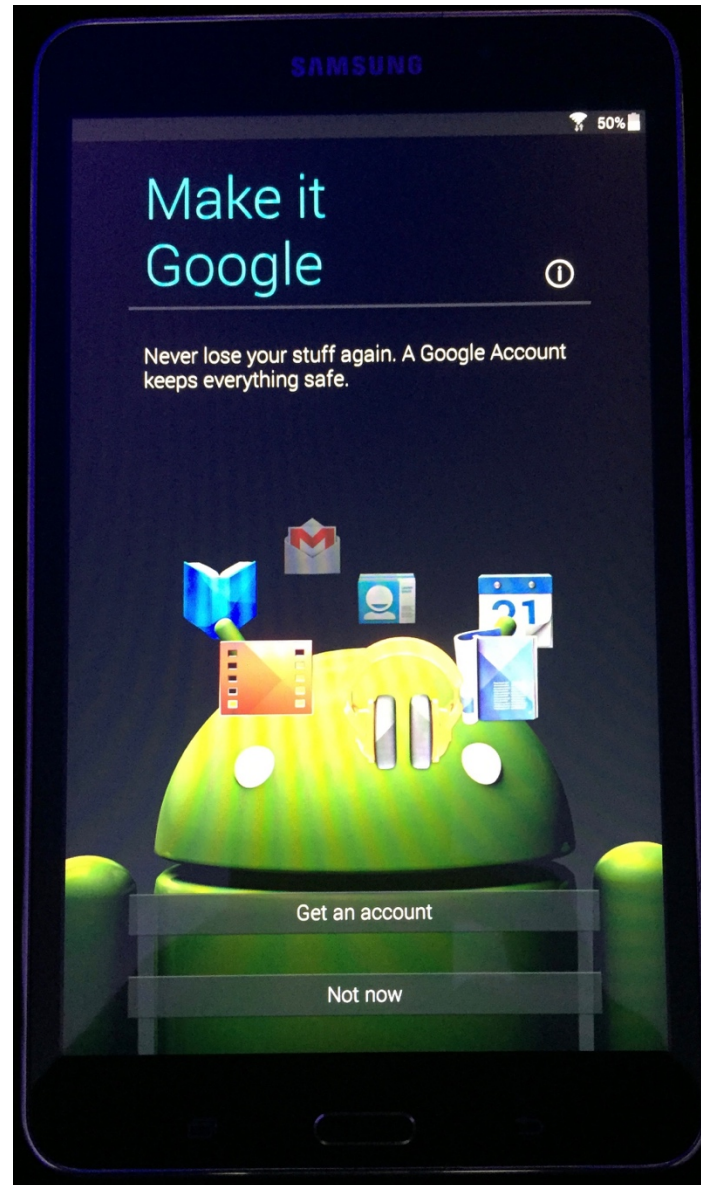


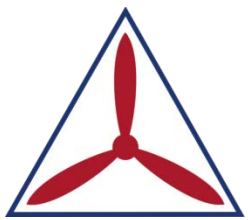
Garmin Virb Kit - Tablet





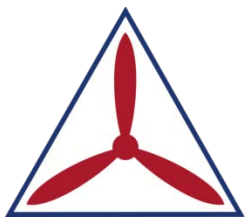
Garmin Virb Kit - Tablet



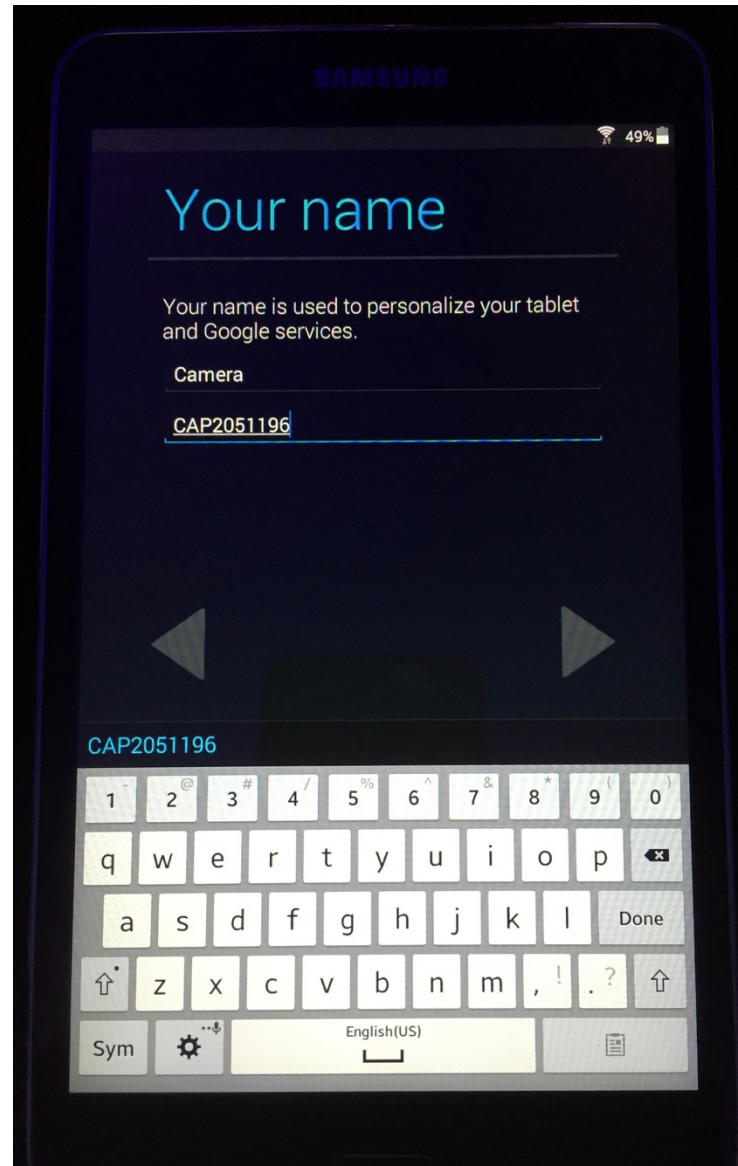


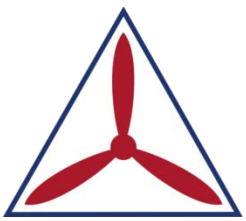
Garmin Virb Kit - Tablet



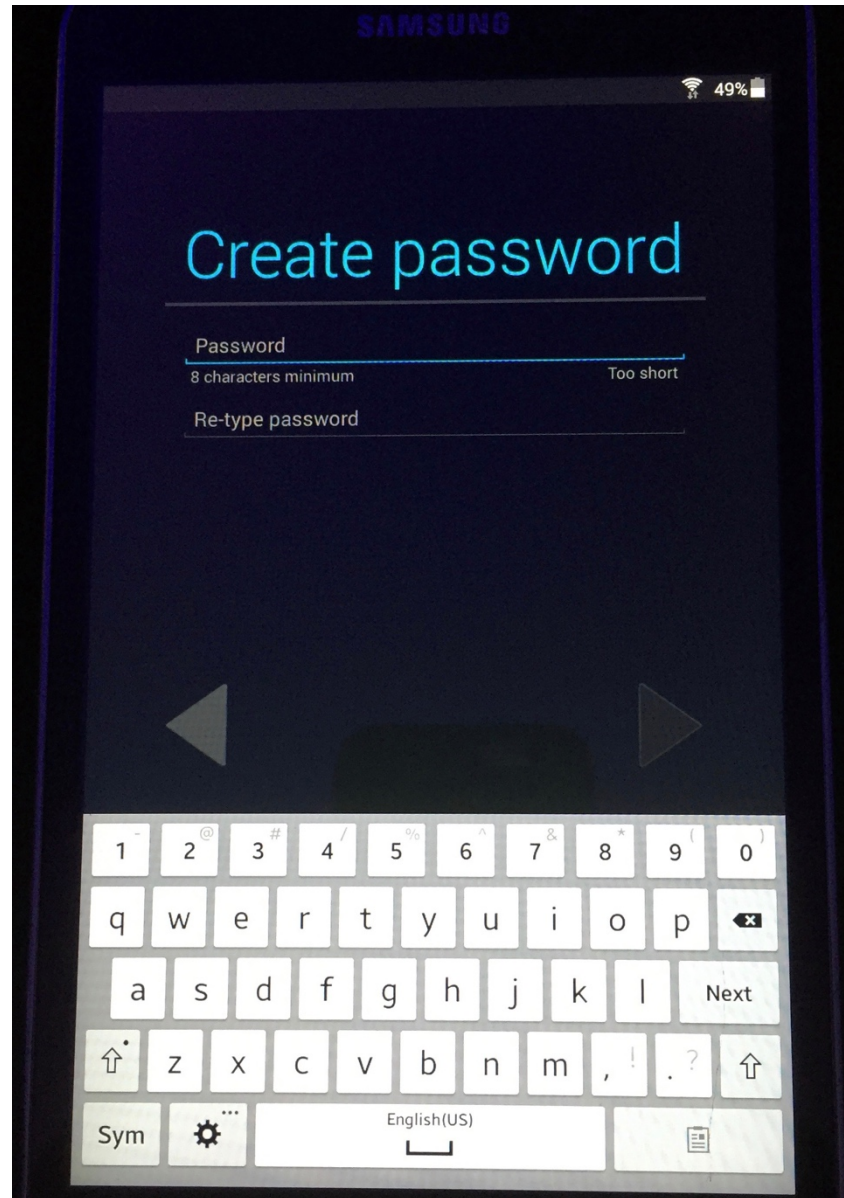


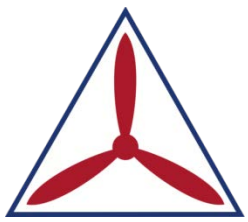
Garmin Virb Kit - Tablet



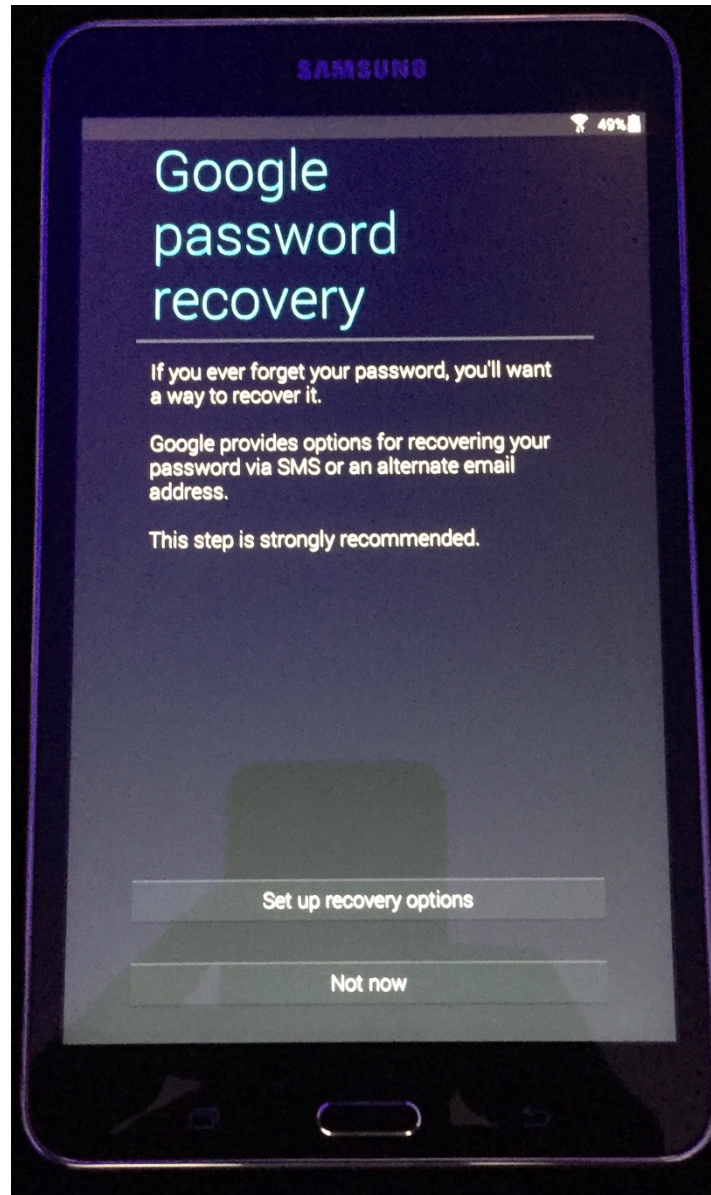


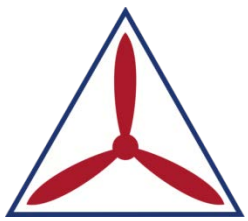
Garmin Virb Kit - Tablet



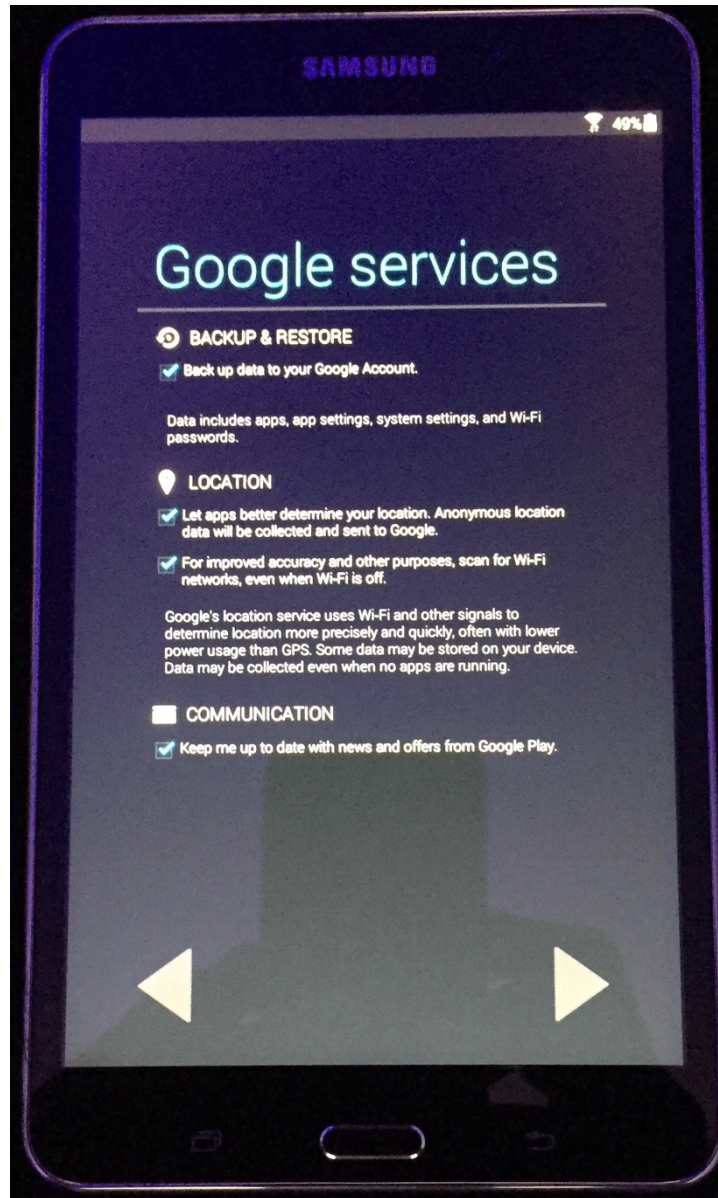


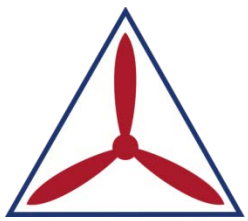
Garmin Virb Kit - Tablet



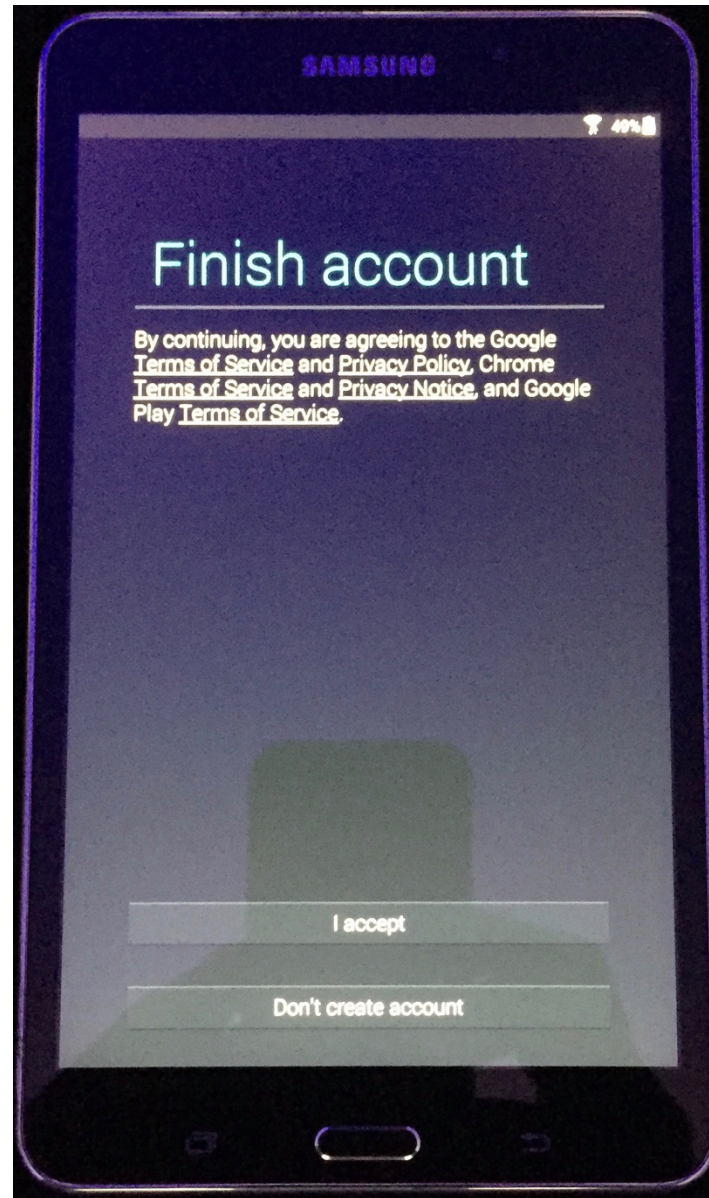


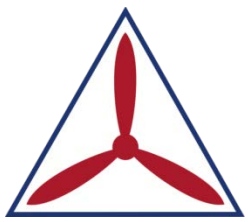
Garmin Virb Kit - Tablet



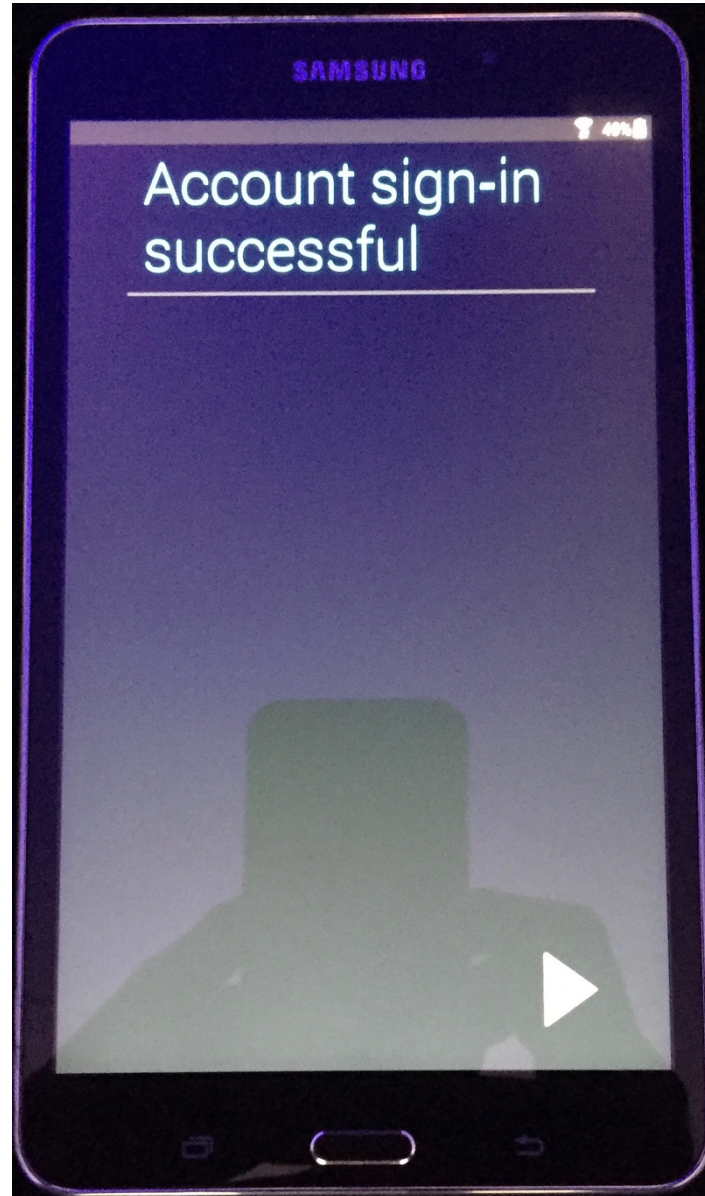


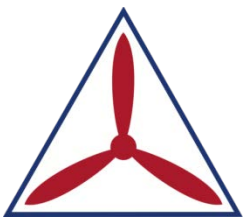
Garmin Virb Kit - Tablet



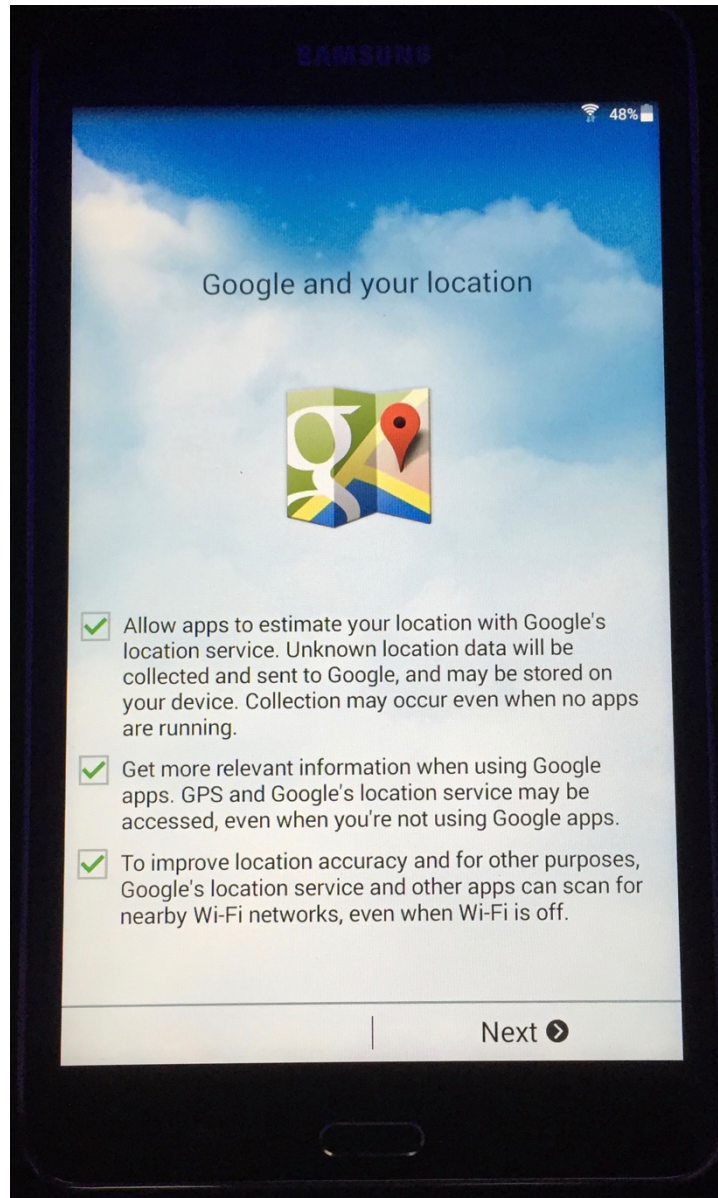


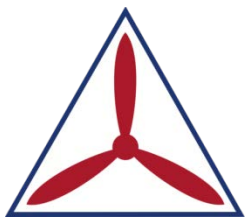
Garmin Virb Kit - Tablet



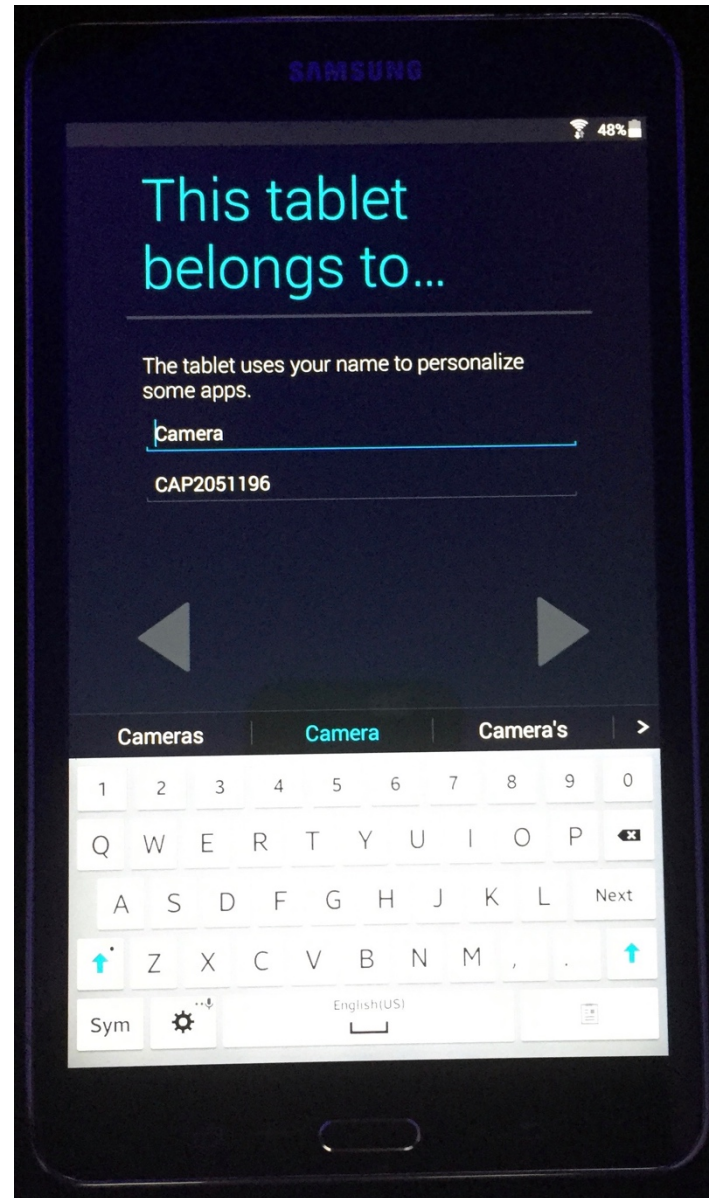


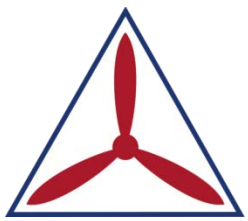
Garmin Virb Kit - Tablet



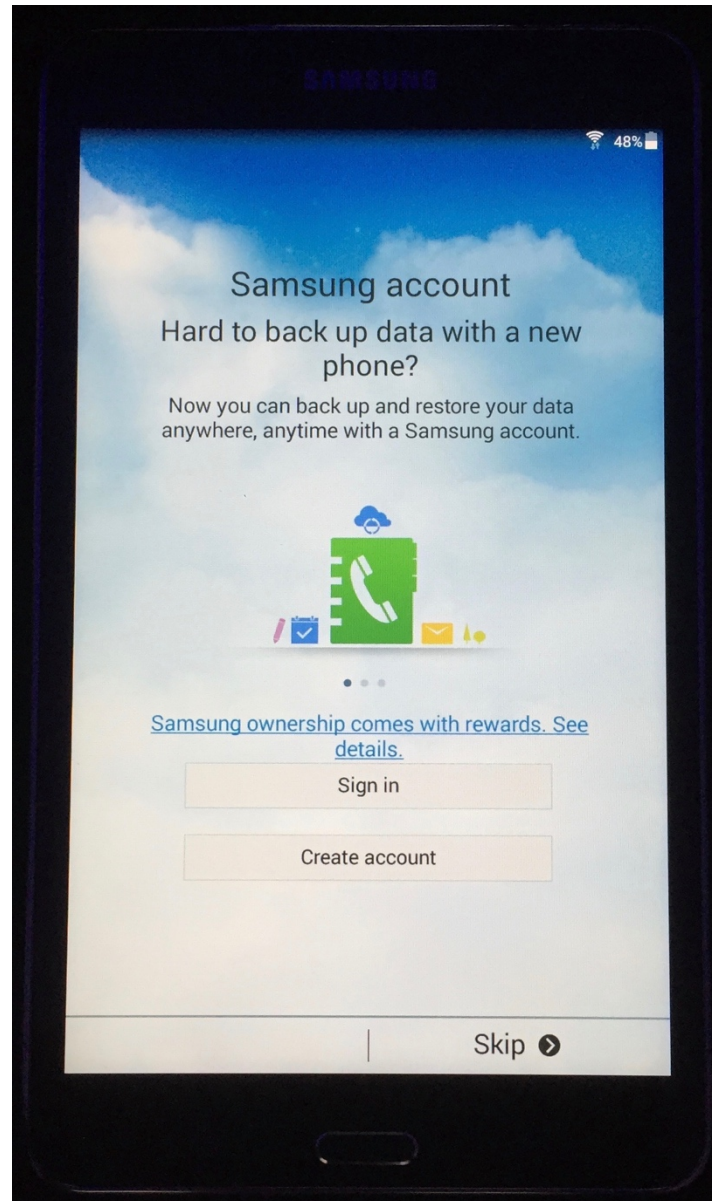


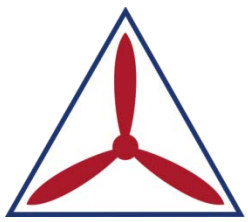
Garmin Virb Kit - Tablet



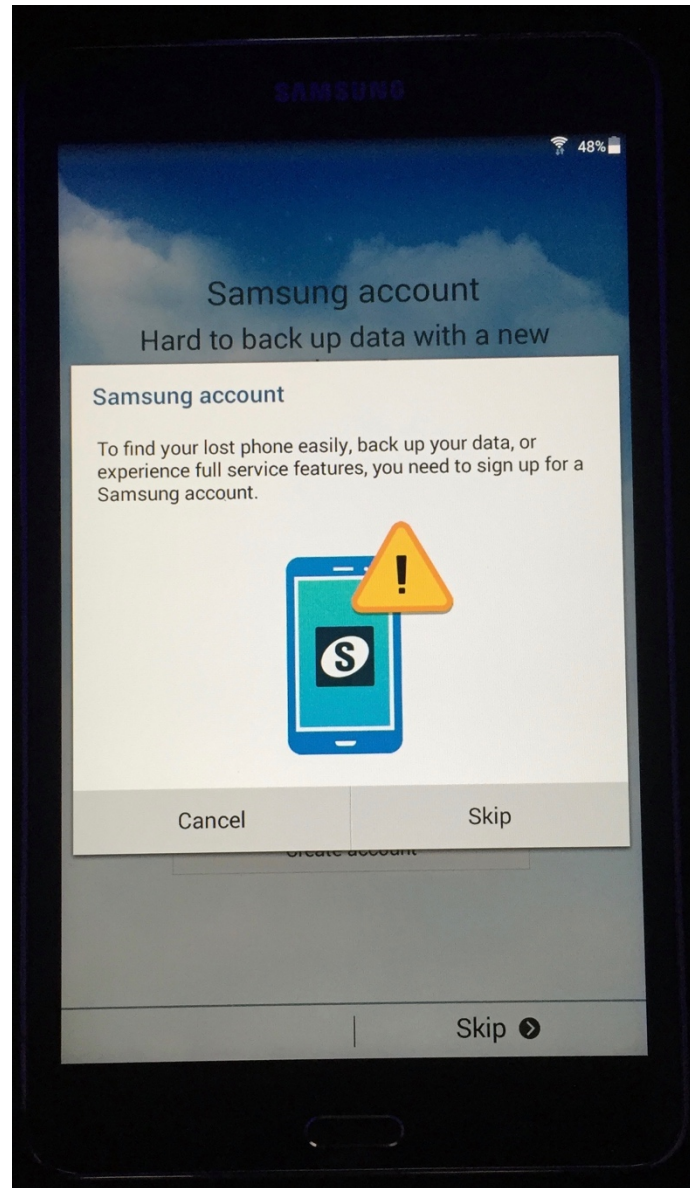


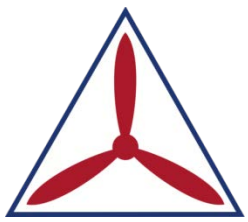
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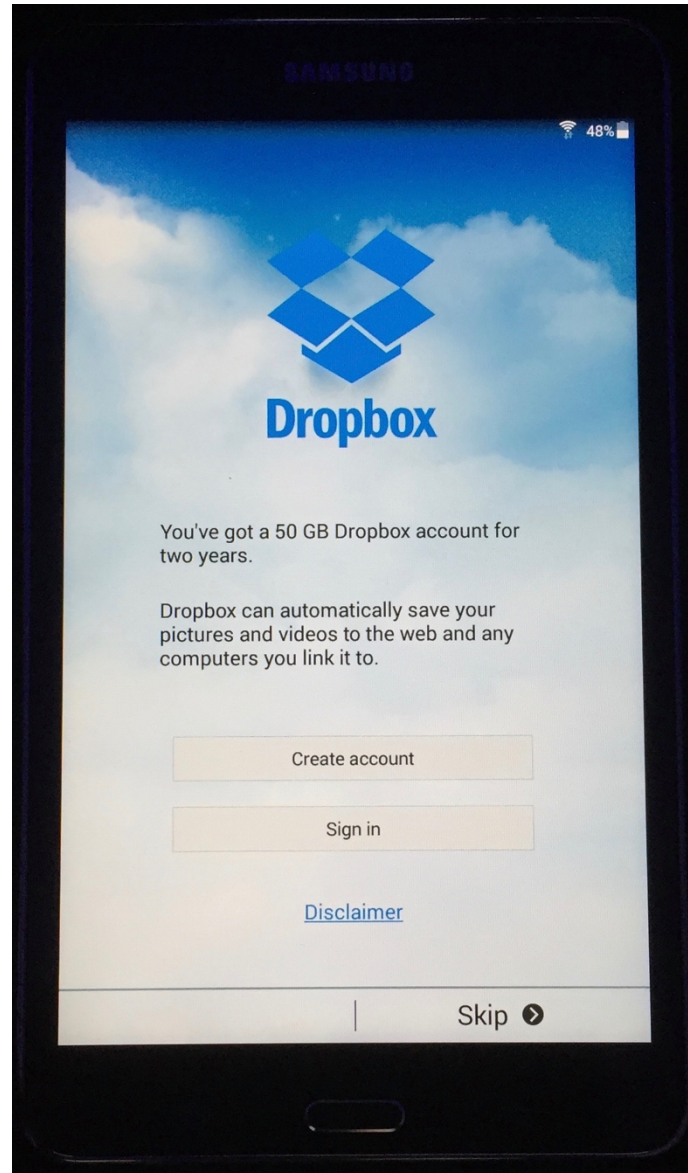


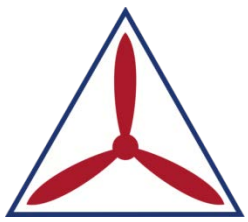
Garmin Virb Kit - Tablet





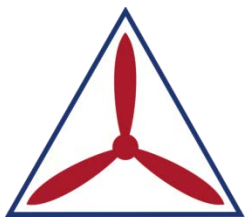
Garmin Virb Kit - Tablet



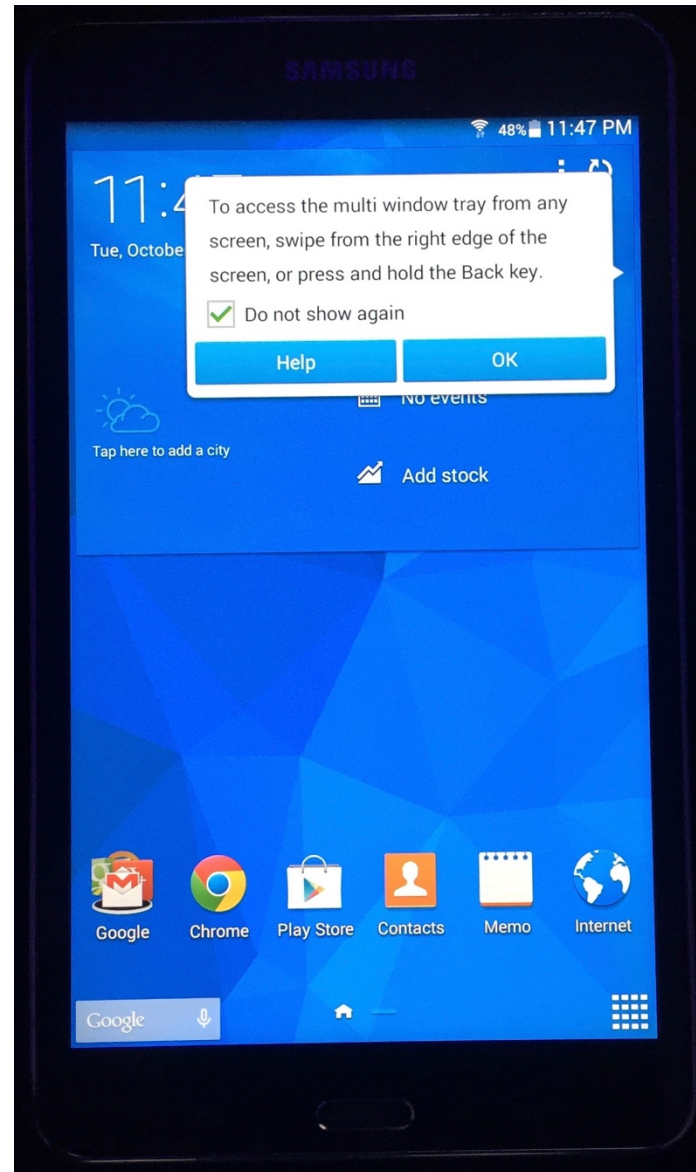


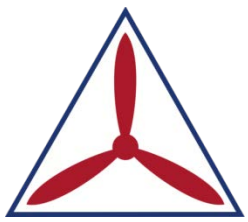
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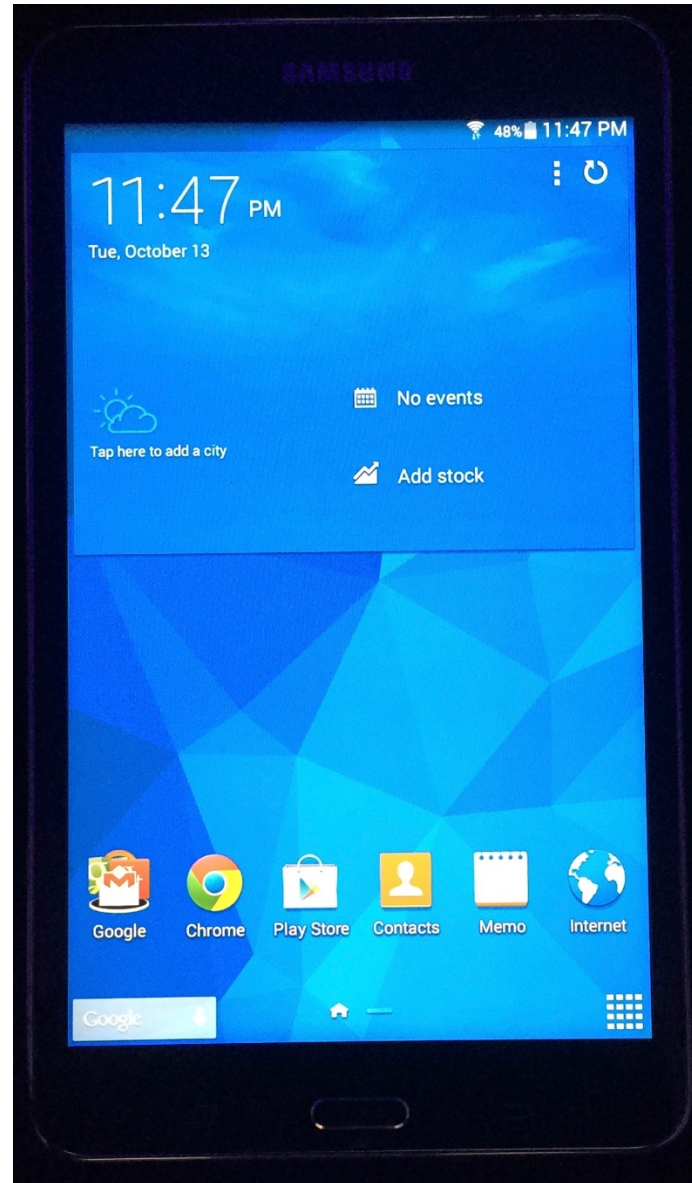


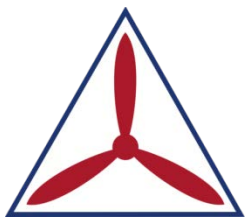
Garmin Virb Kit - Tablet



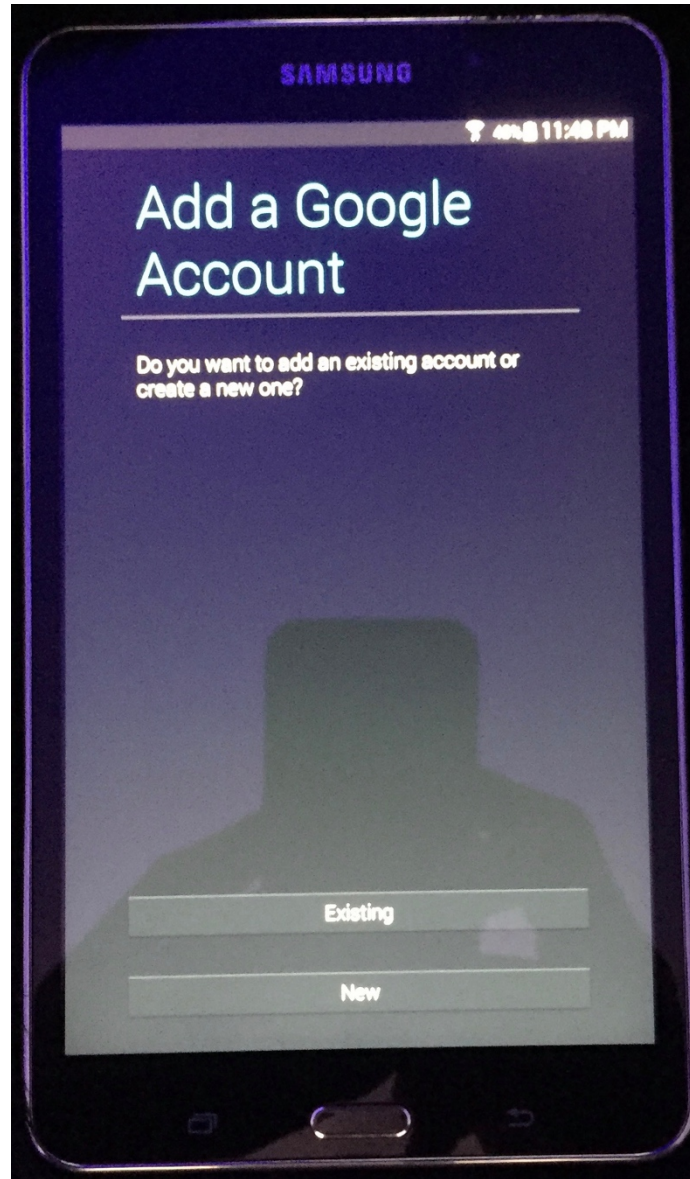


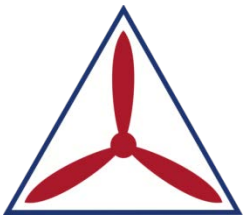
Garmin Virb Kit - Tablet



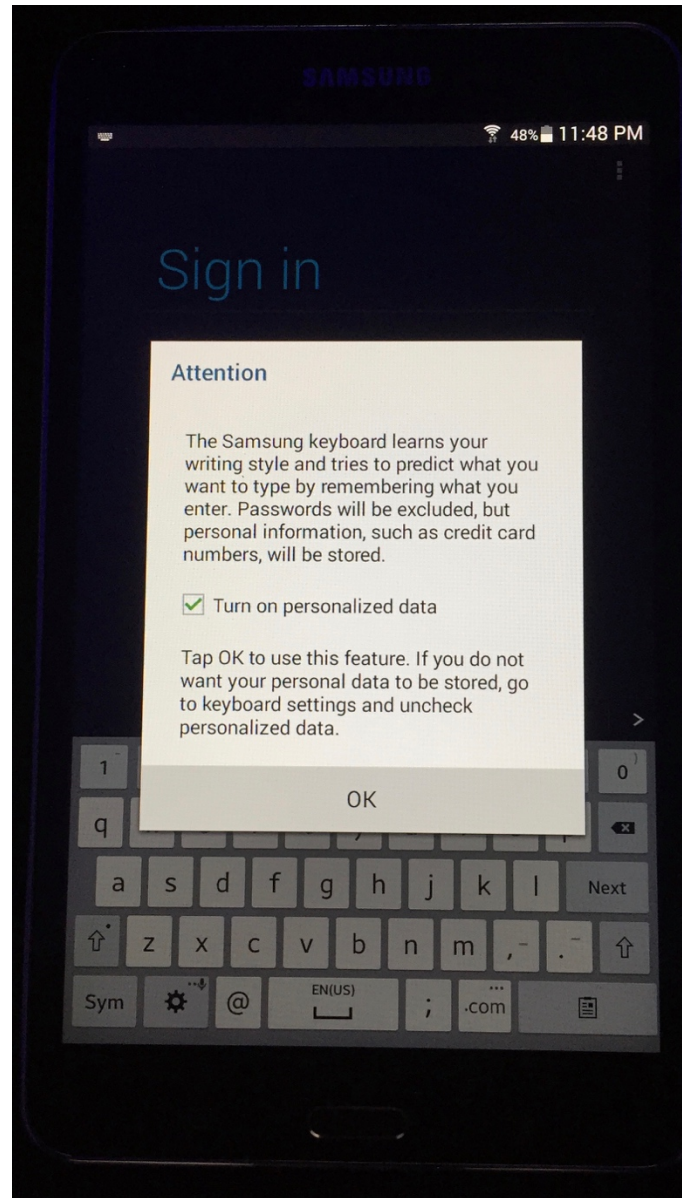


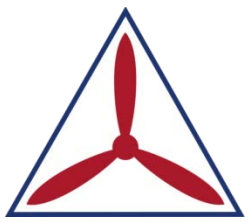
Garmin Virb Kit - Tablet



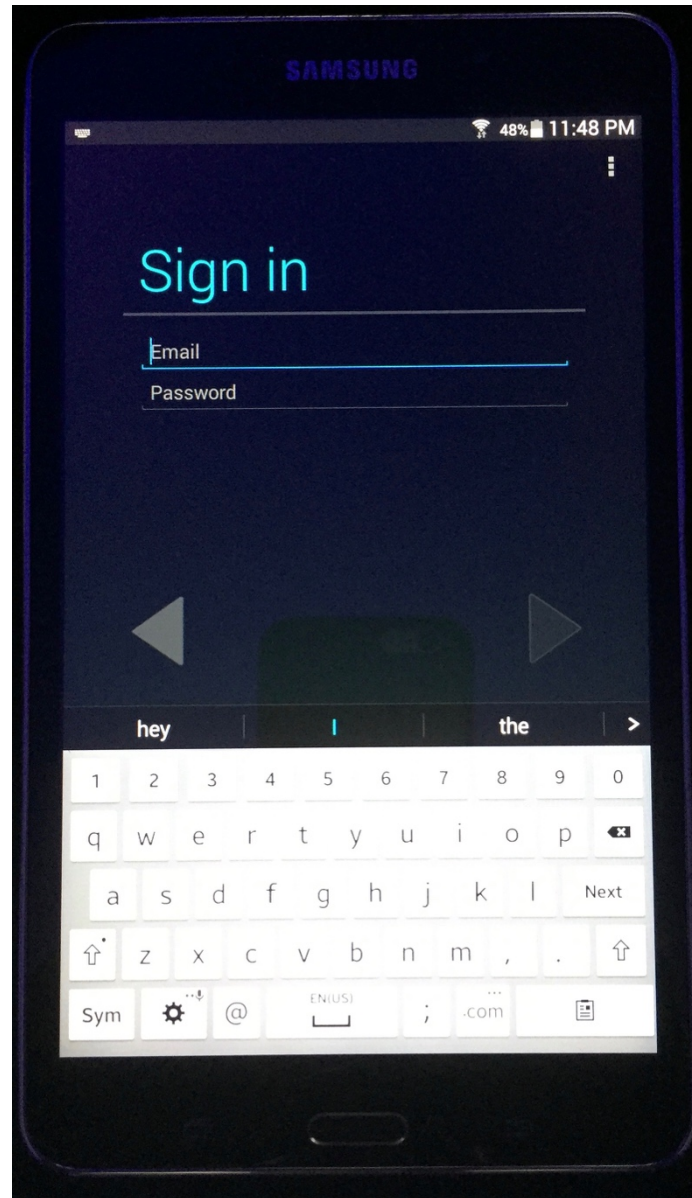


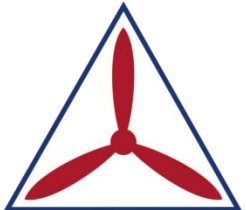
Garmin Virb Kit - Tablet



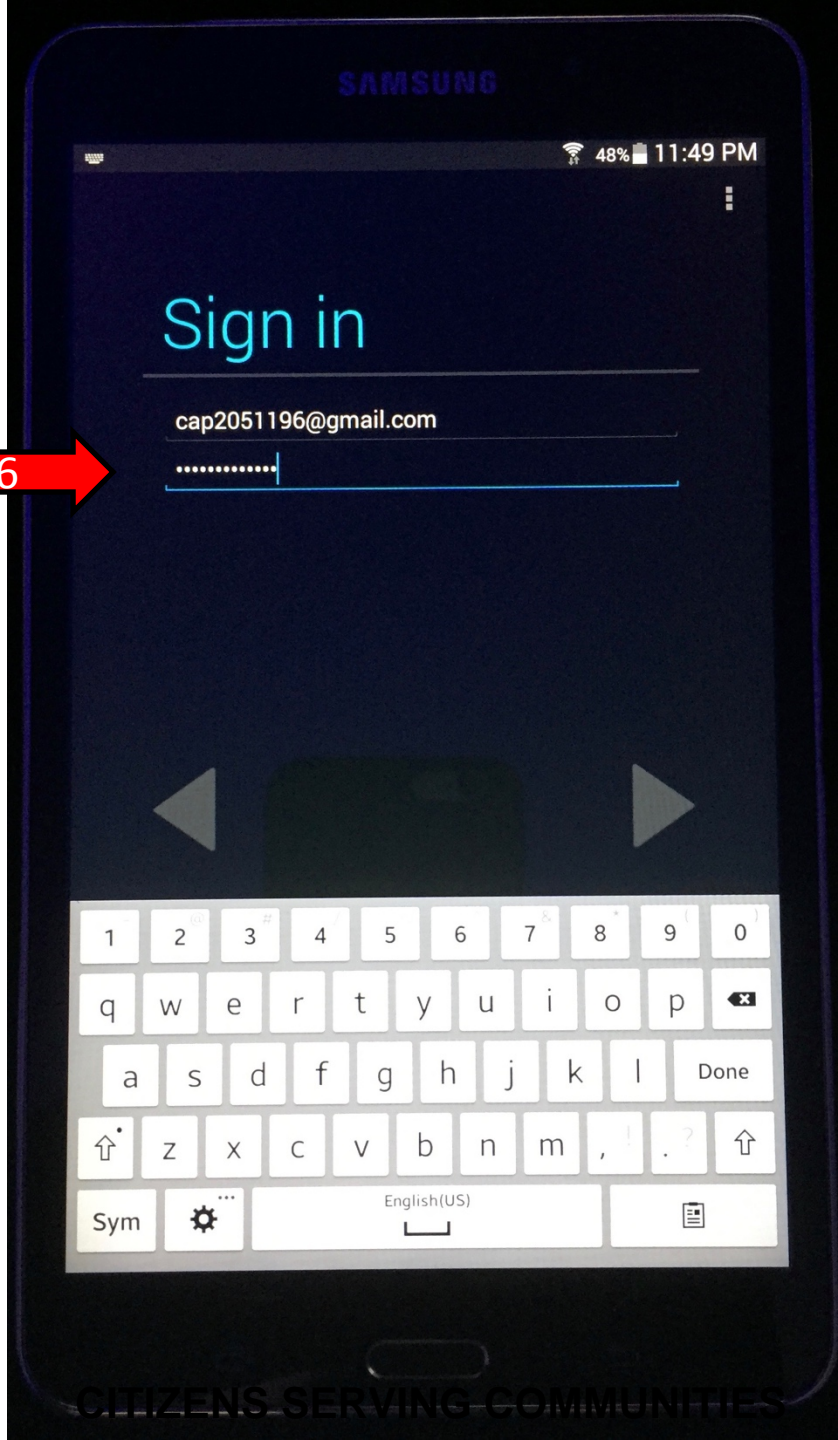


Garmin Virb Kit - Tablet

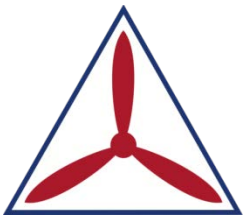




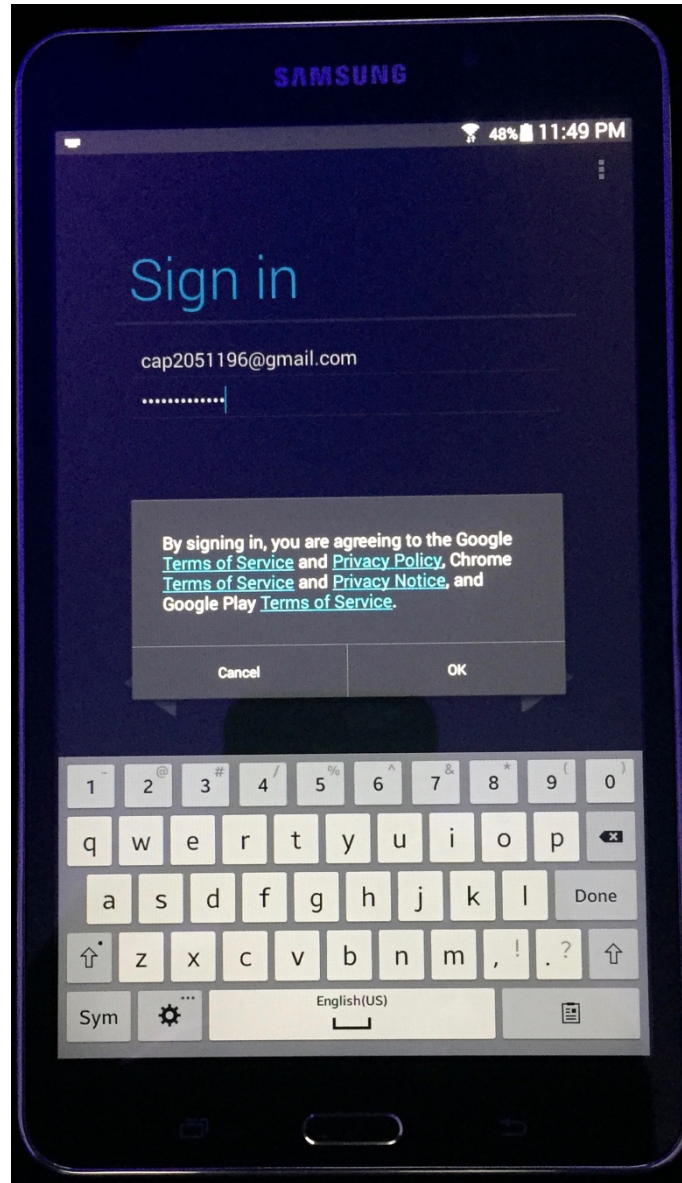
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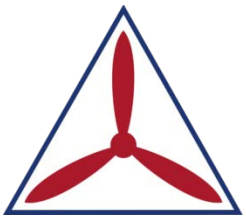


Garmin Virb Kit - Tablet

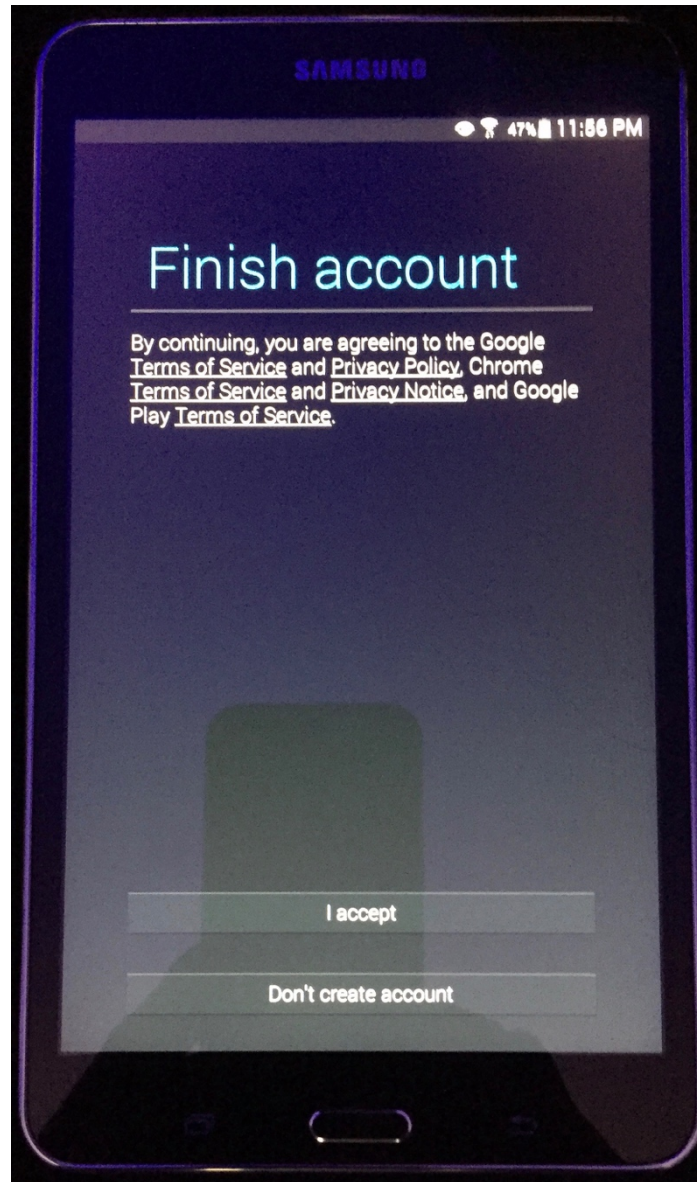


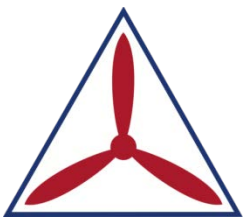
Garmin Virb Kit - Tablet



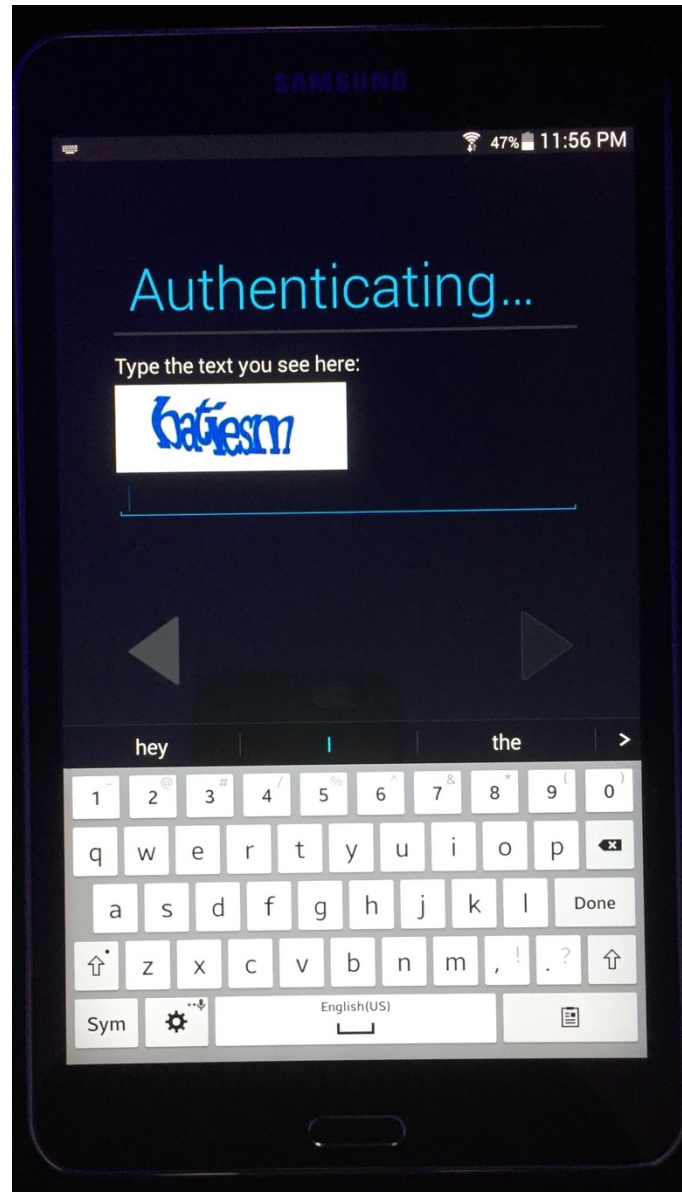


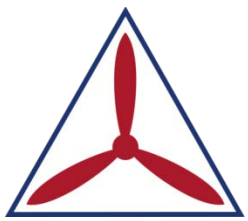
Garmin Virb Kit - Tablet



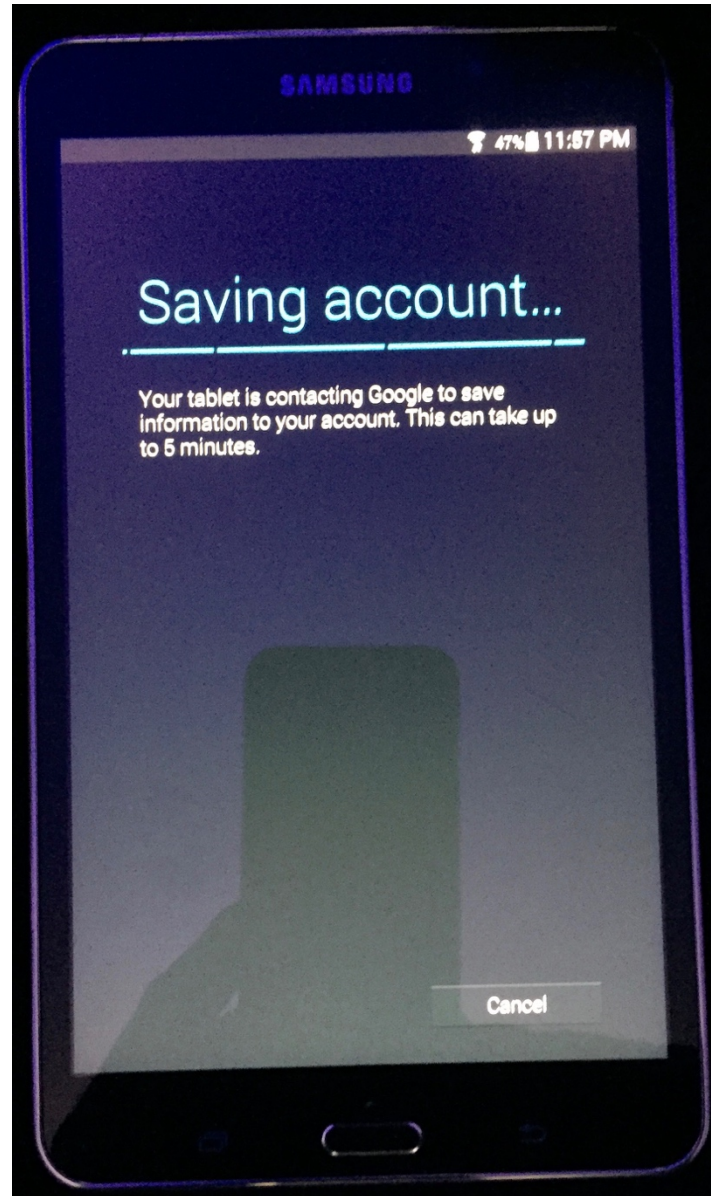


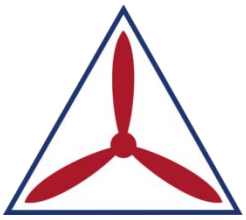
Garmin Virb Kit - Tablet



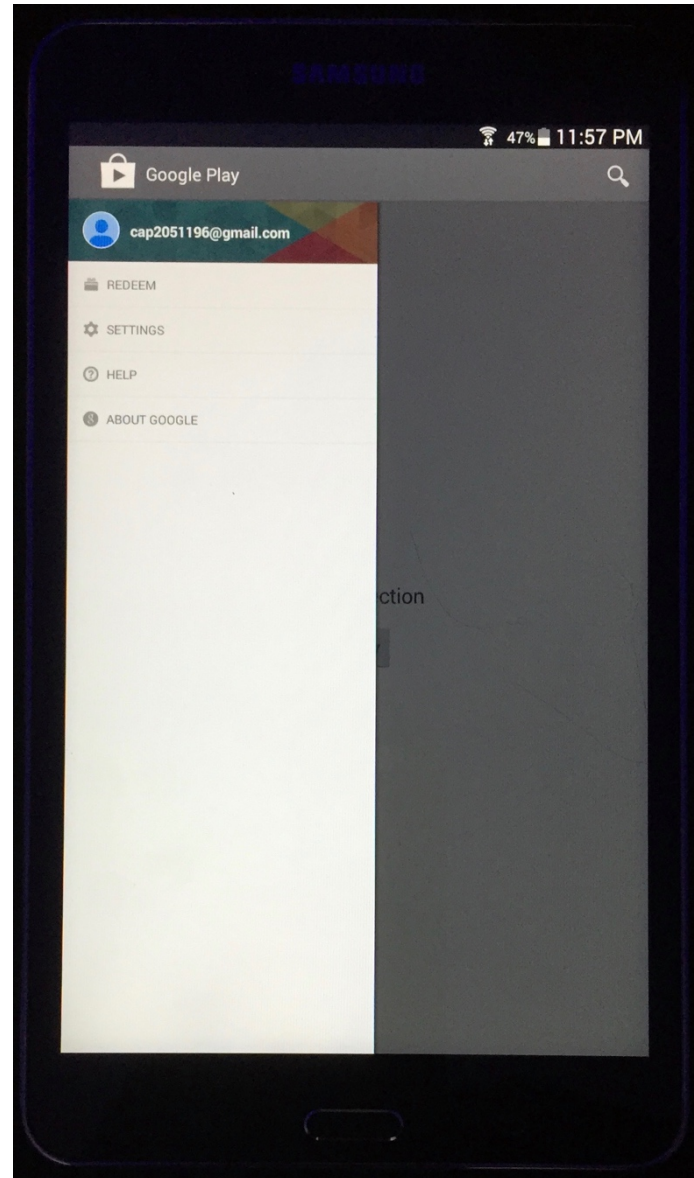


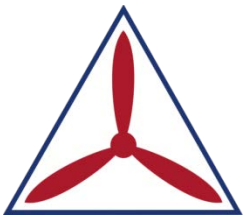
Garmin Virb Kit - Tablet



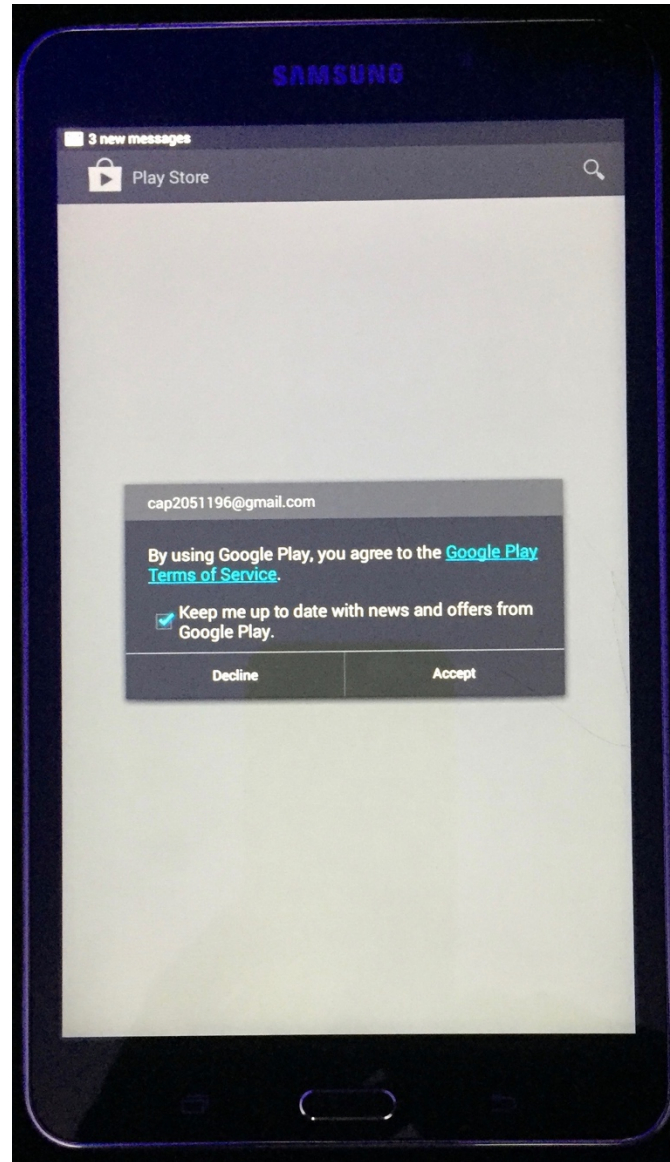


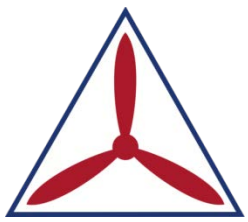
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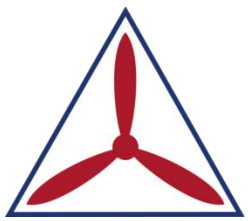
Garmin Virb Kit - Tablet



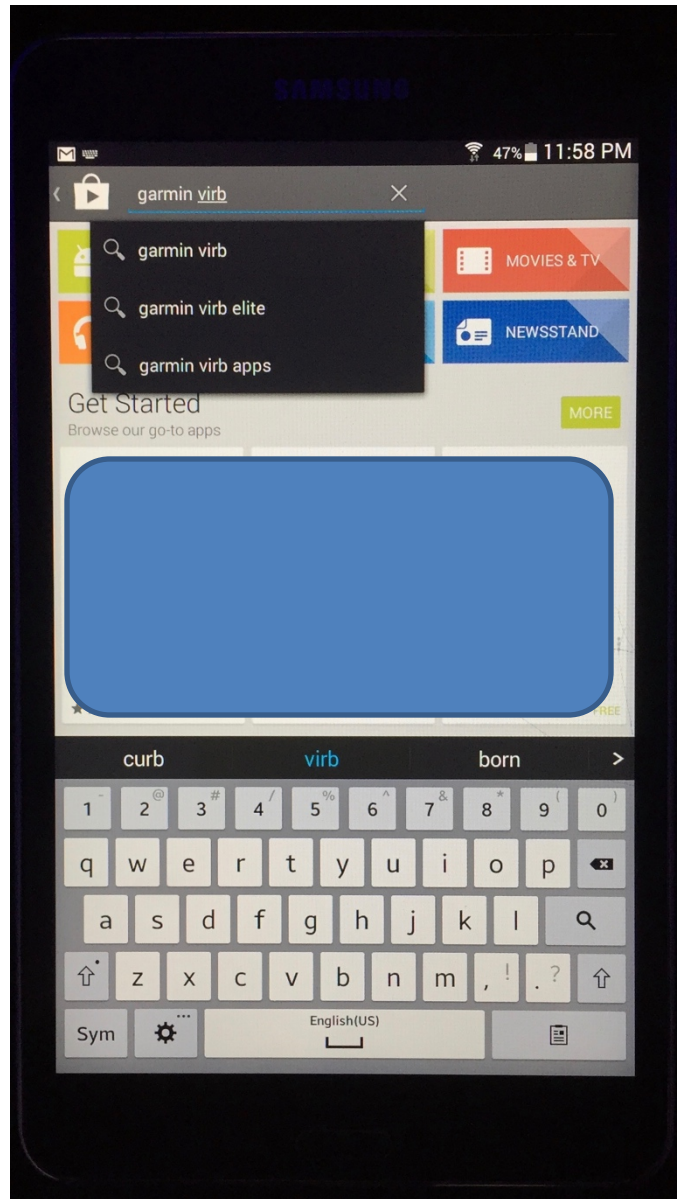


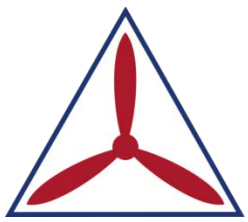
Disaster Photography

- └ Project Definition
- └ Project Goals
- └ Customer Use of Imagery
- └ **Equipment – Garmin Virb Kits**
 - **Garmin Virb - App**
- └ Application
- └ State of Testing / Next Steps

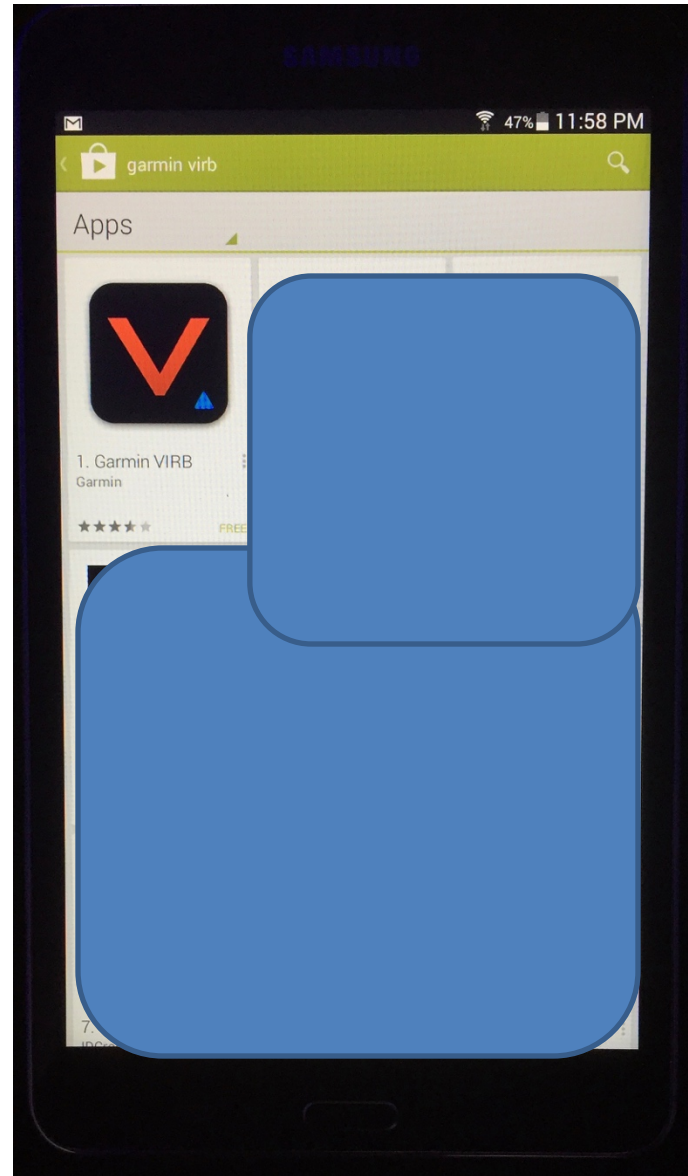


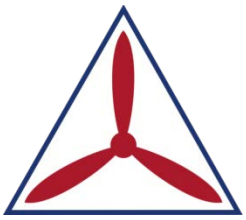
Garmin Virb Kit - Tablet



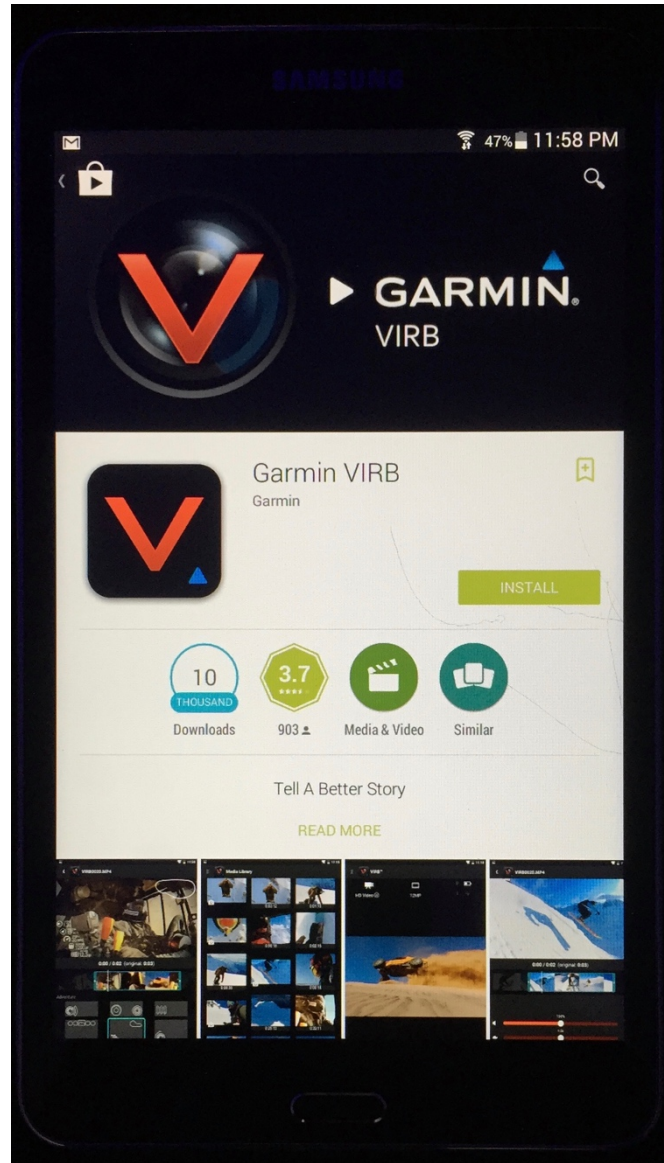


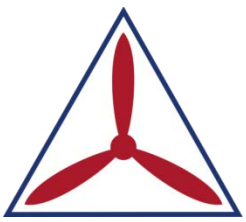
Garmin Virb Kit - Tablet



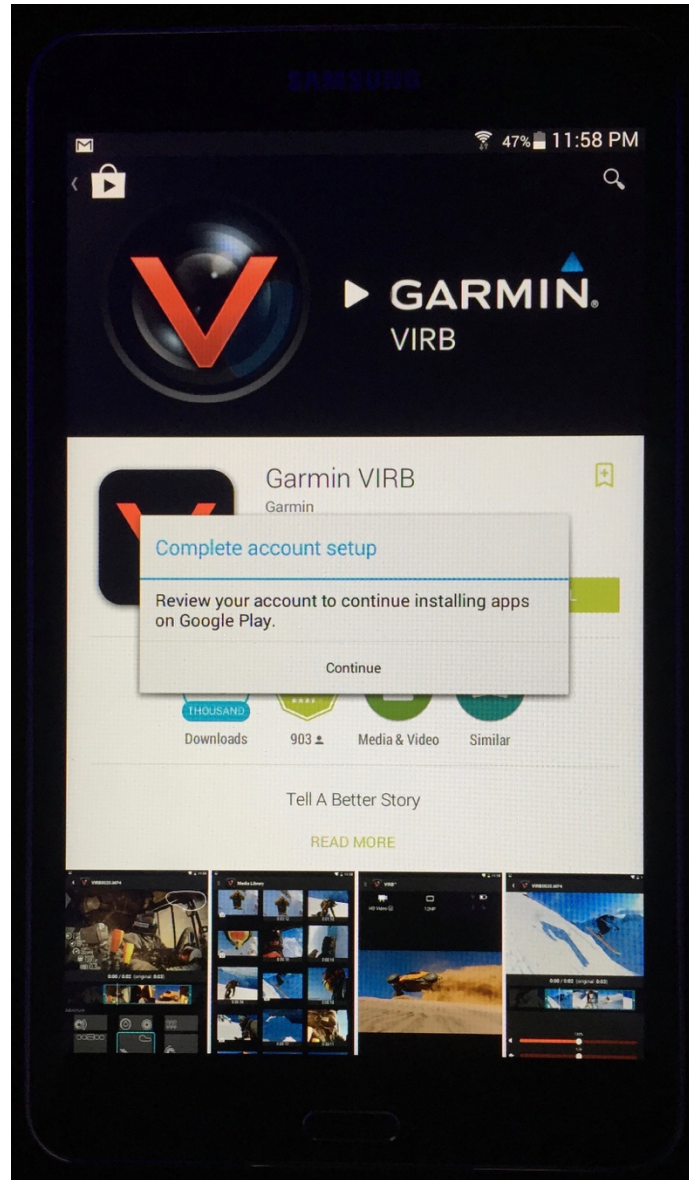


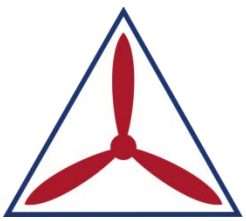
Garmin Virb Kit - Tablet



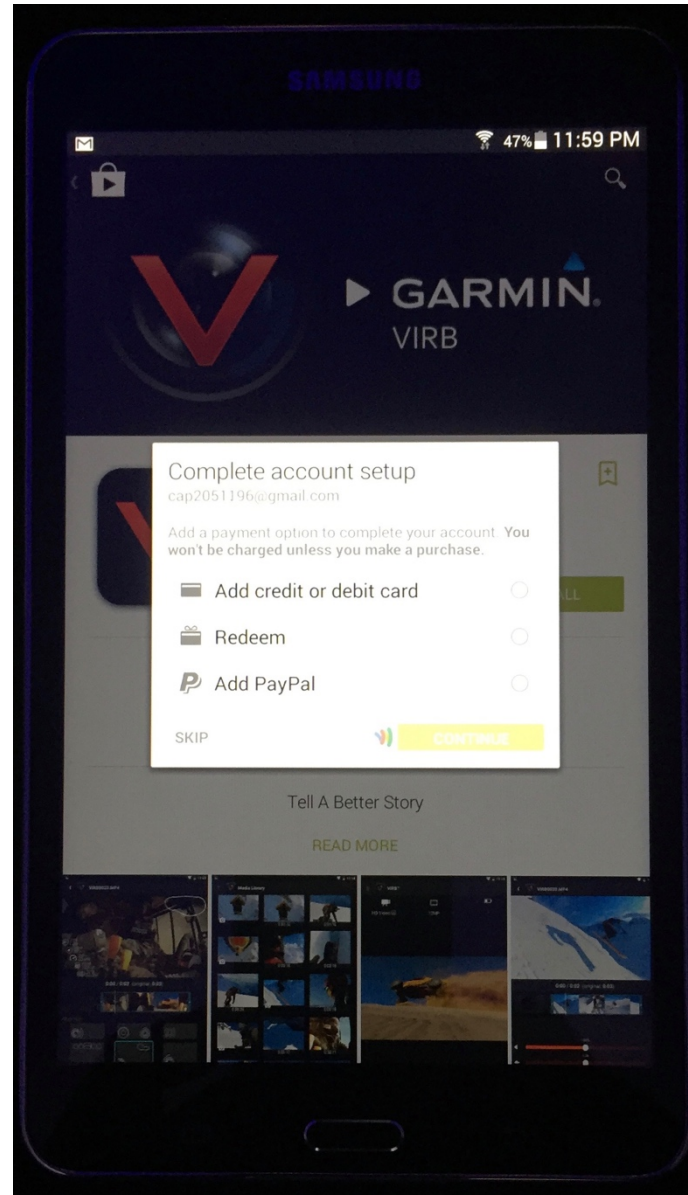


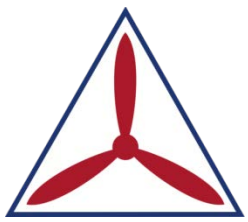
Garmin Virb Kit - Tablet



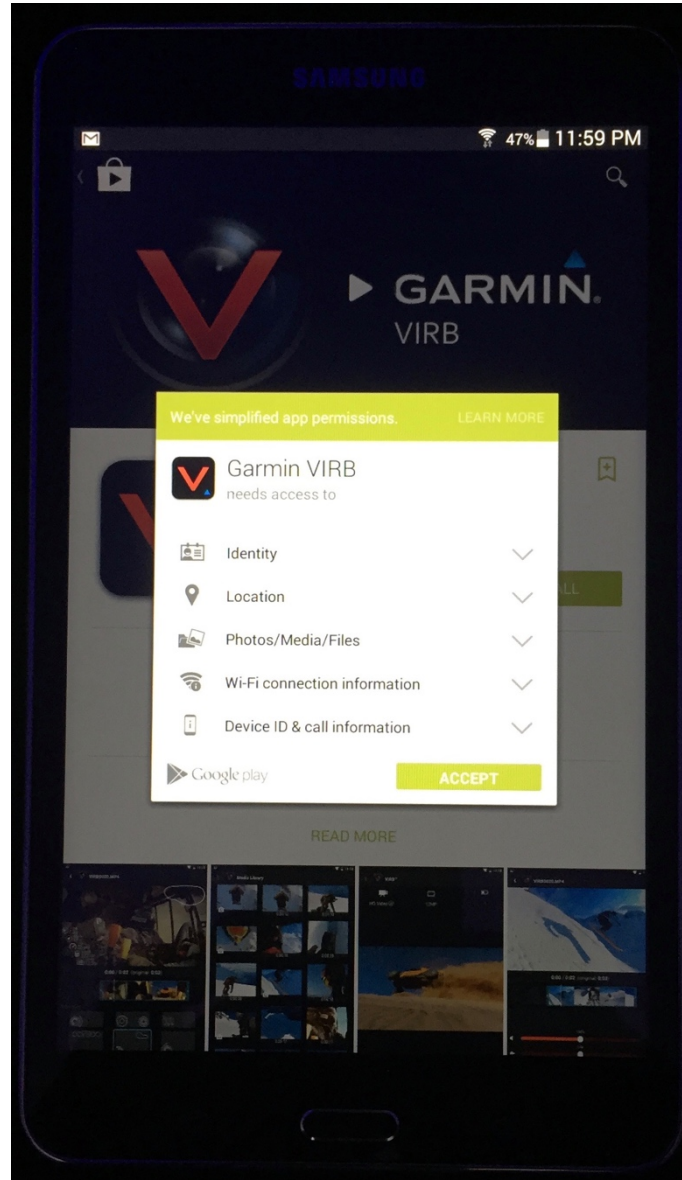


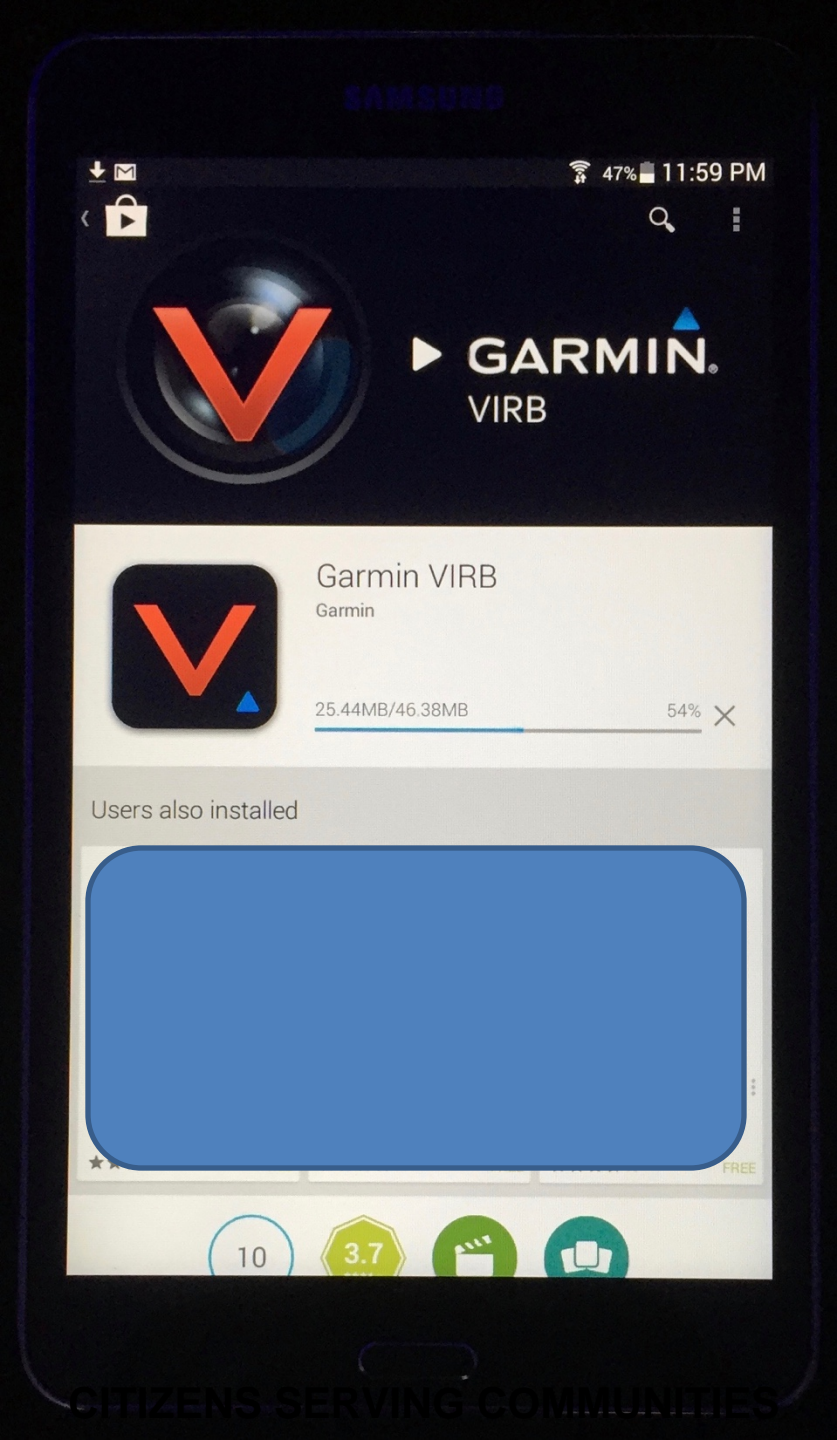
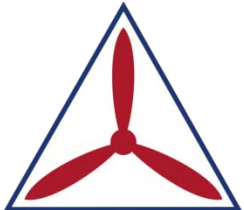
Garmin Virb Kit - Tablet

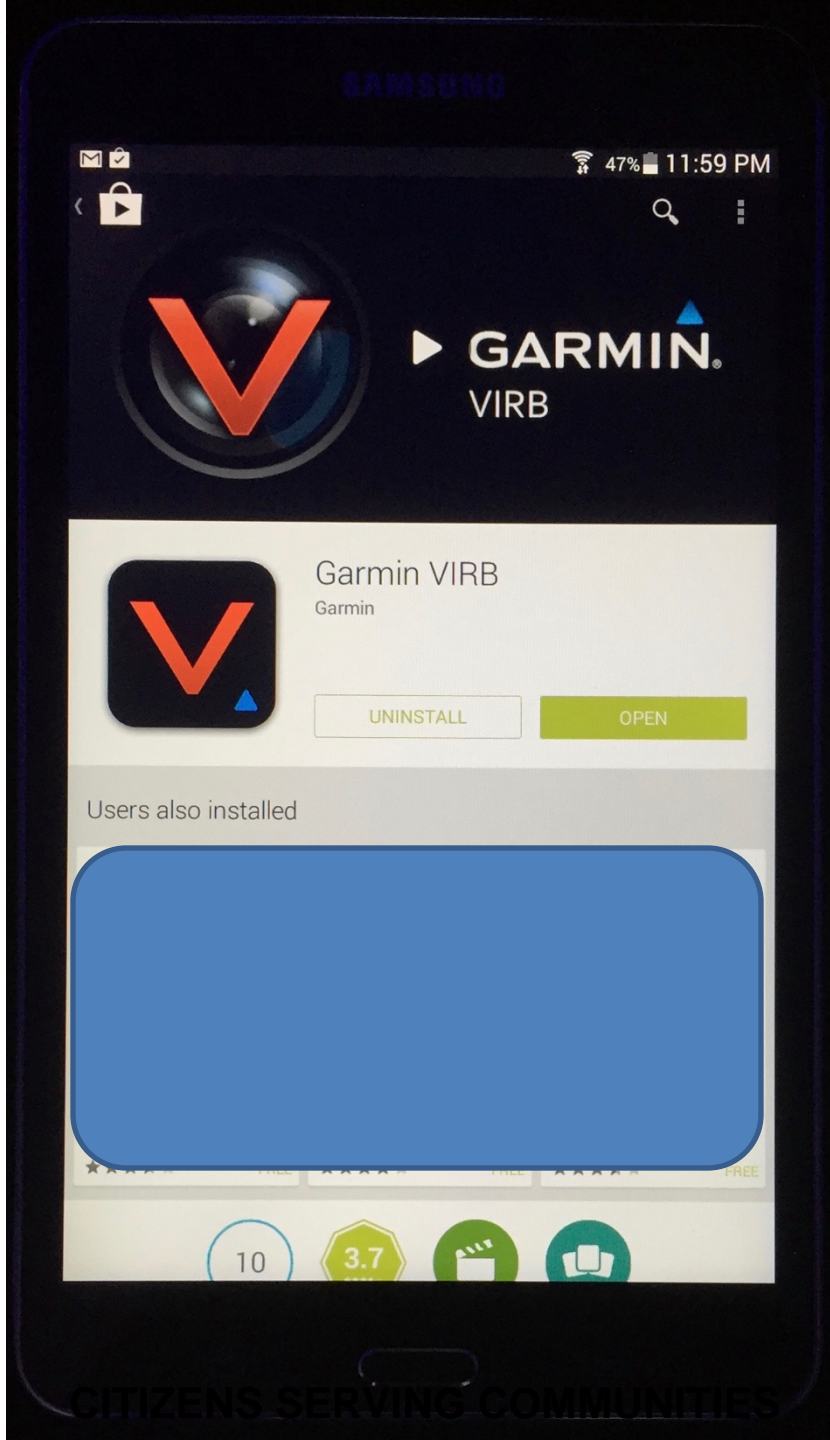
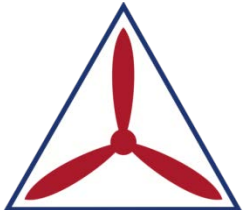


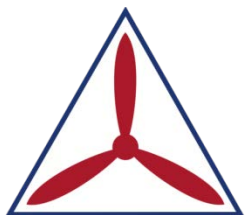


Garmin Virb Kit - Tablet

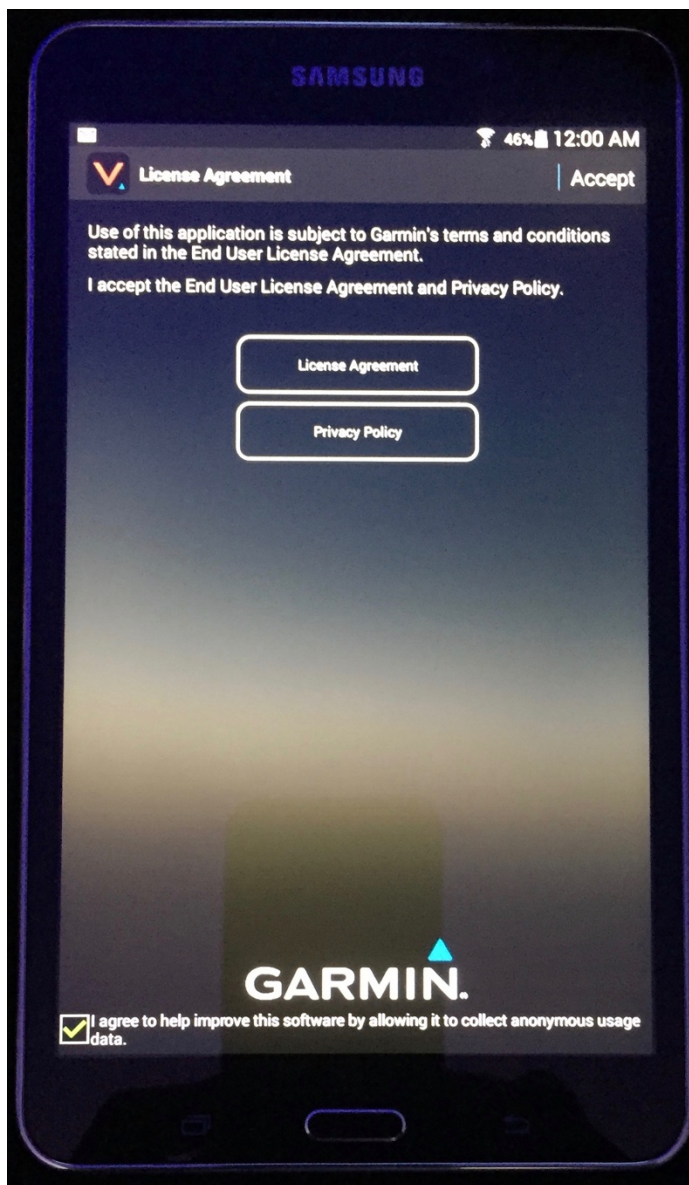


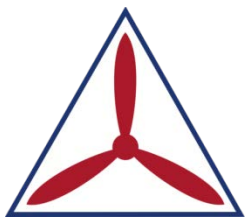






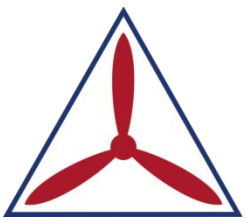
Garmin Virb Kit - Tablet



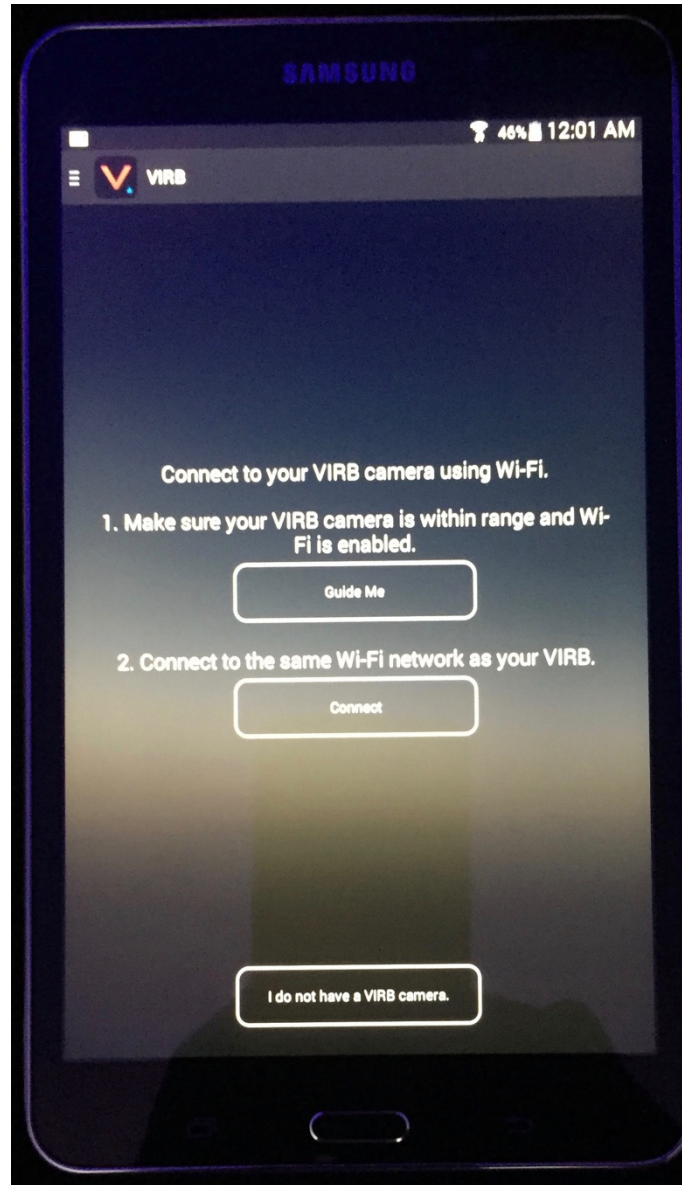


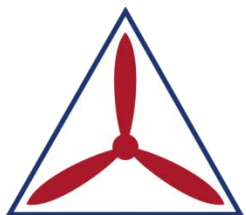
Garmin Virb Kit - Tablet



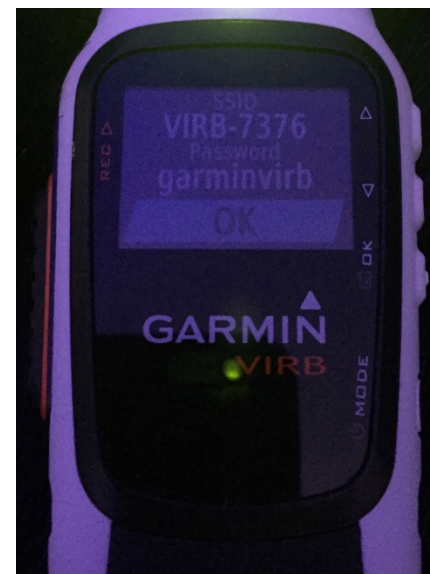
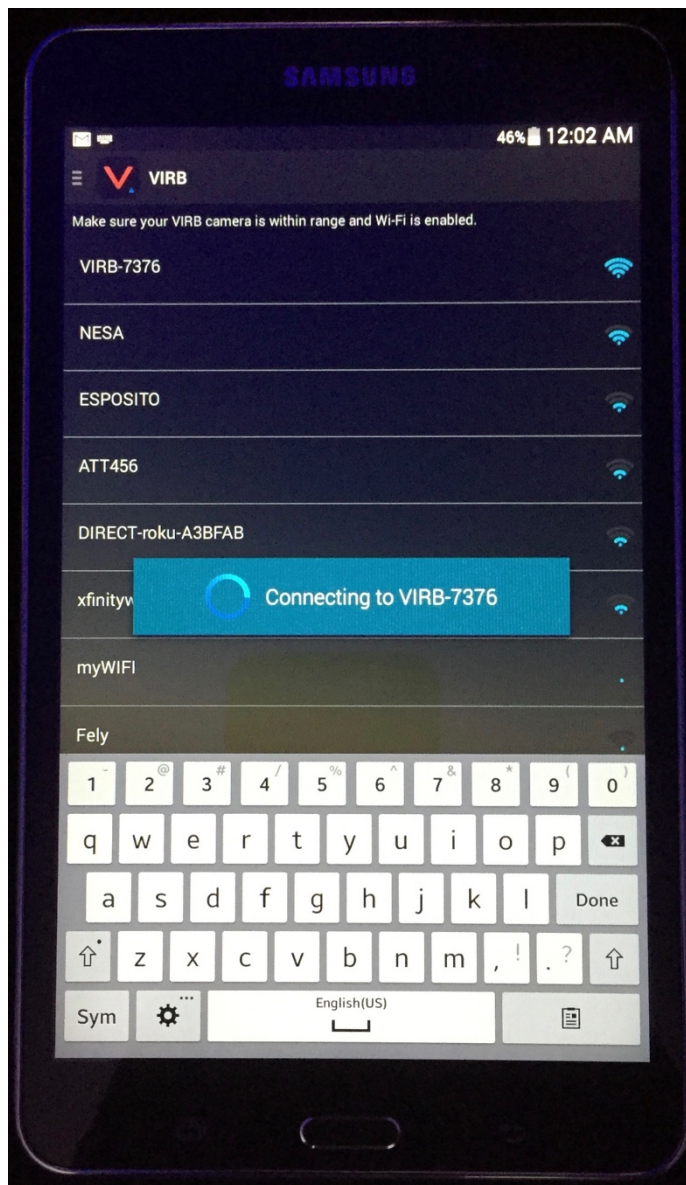


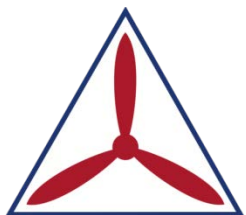
Garmin Virb Kit - Tablet



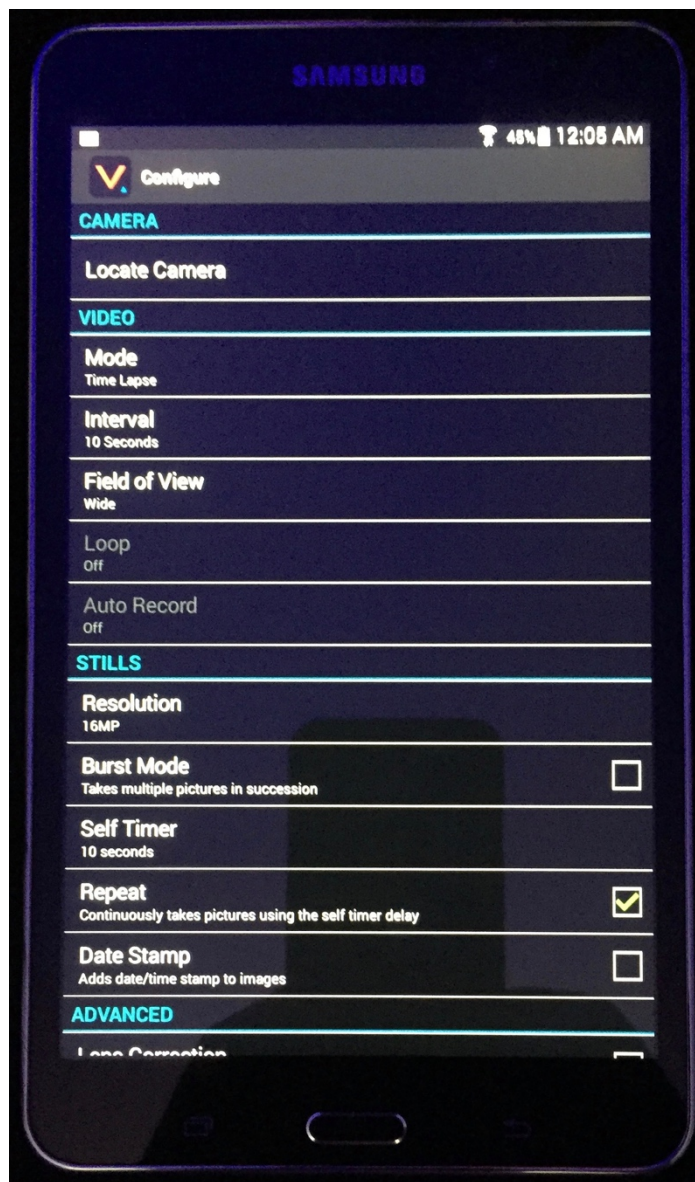


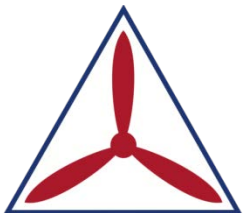
Garmin Virb Kit - Tablet



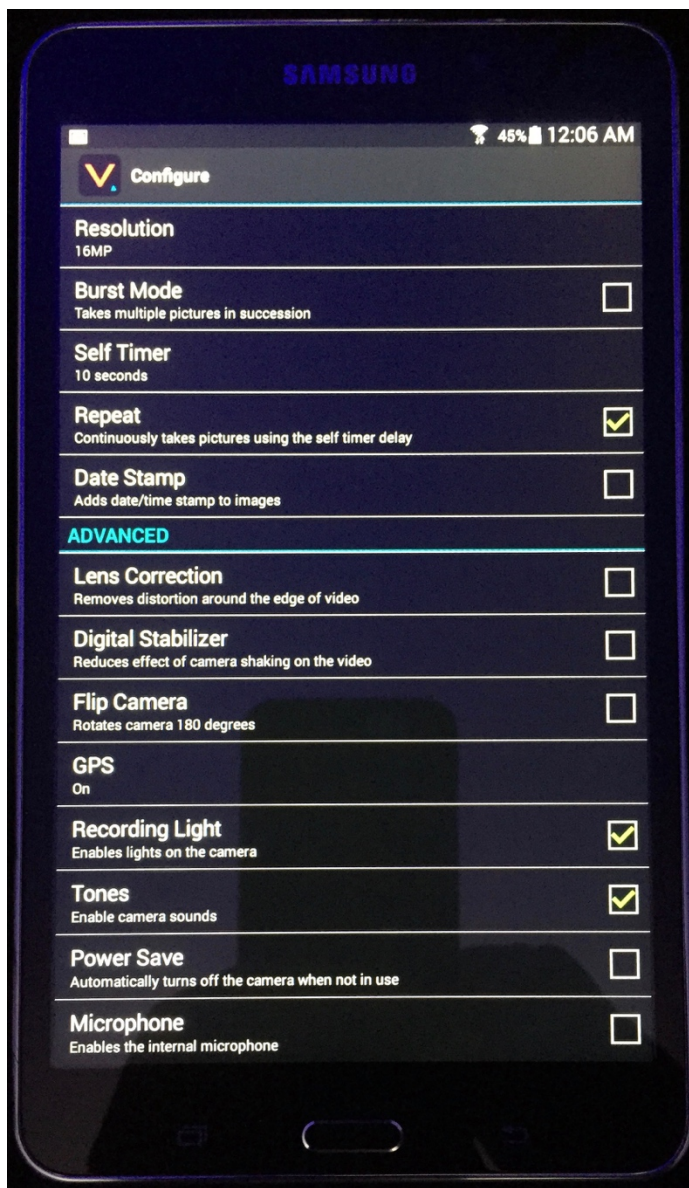


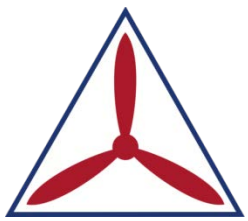
Garmin Virb Kit - Tablet



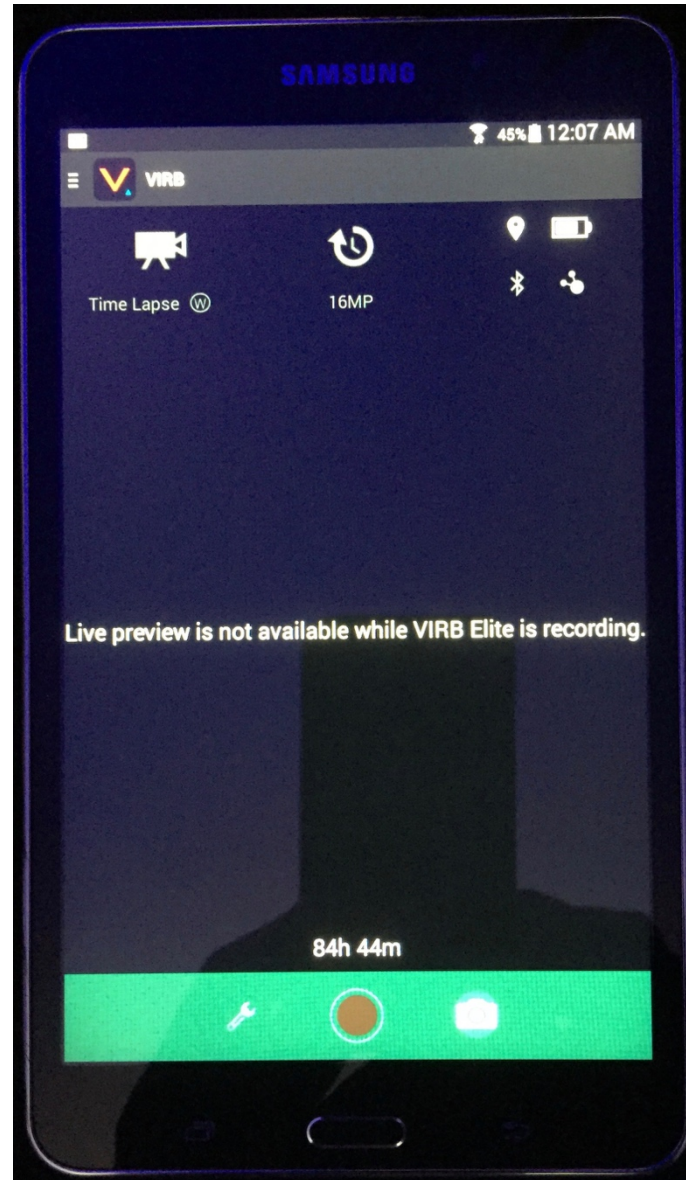


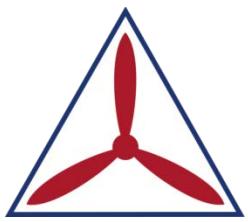
Garmin Virb Kit - Tablet





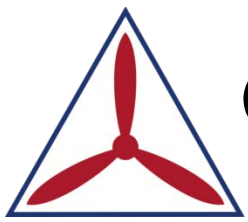
Garmin Virb Kit - Tablet





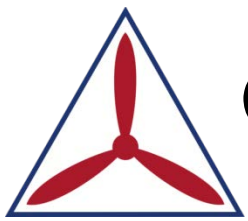
Disaster Photography

- └ Project Definition
- └ Project Goals
- └ Customer Use of Imagery
- └ **Equipment – Garmin Virb Kits**
 - **Building the mounting base assembly**
- └ Application
- └ State of Testing / Next Steps



Garmin Virb Kit – Assembling the Mount

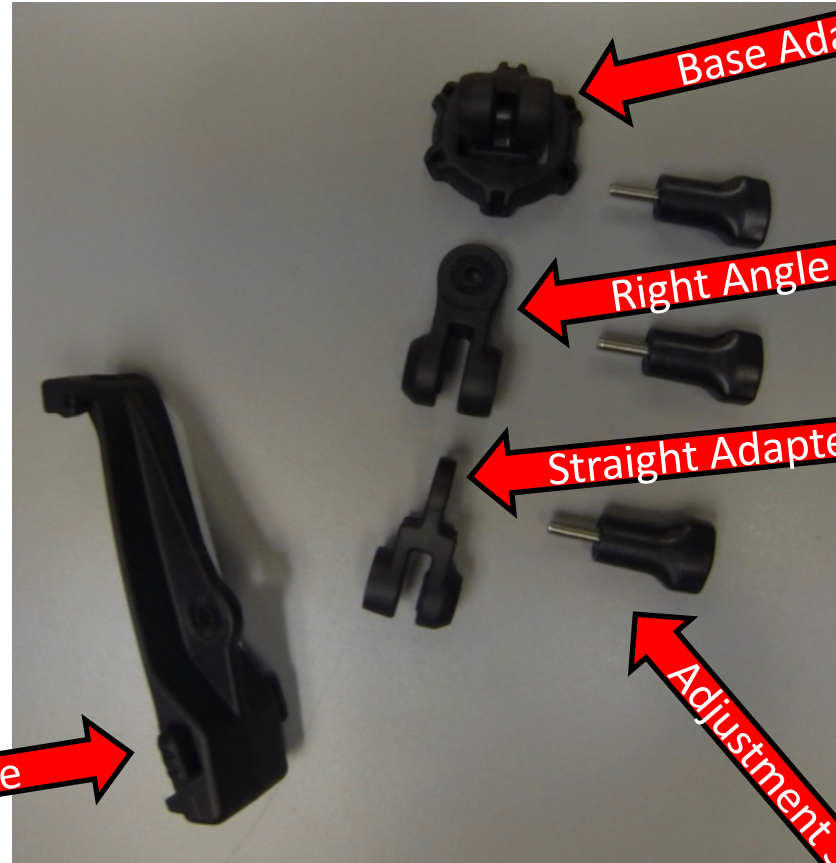




Garmin Virb Kit – Assembling the Mount



Camera Cradle

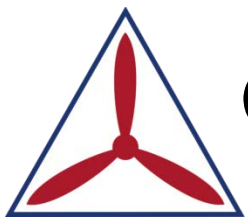


Base Adapter

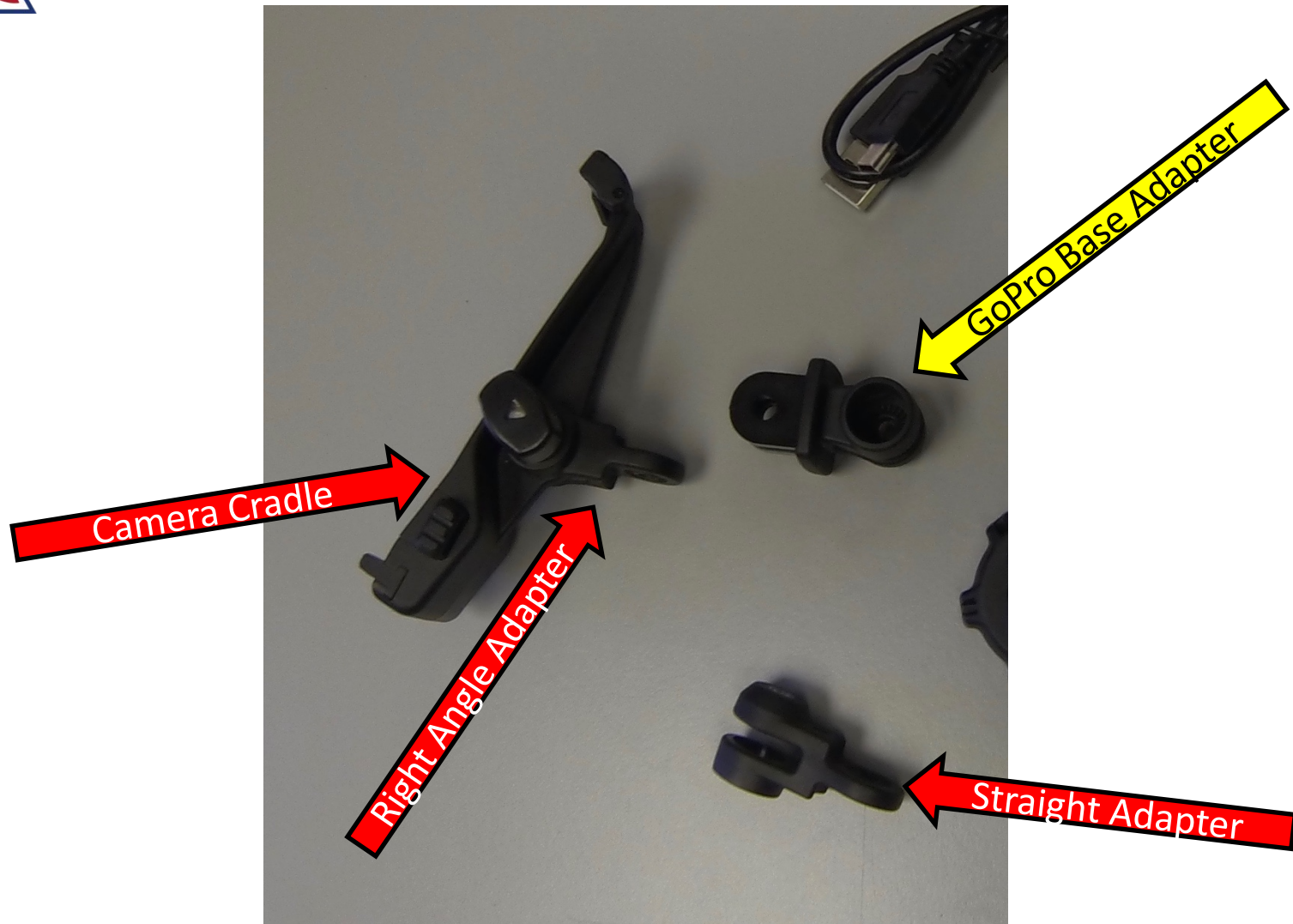
Right Angle Adapter

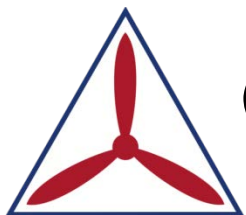
Straight Adapter

Adjustment Screws

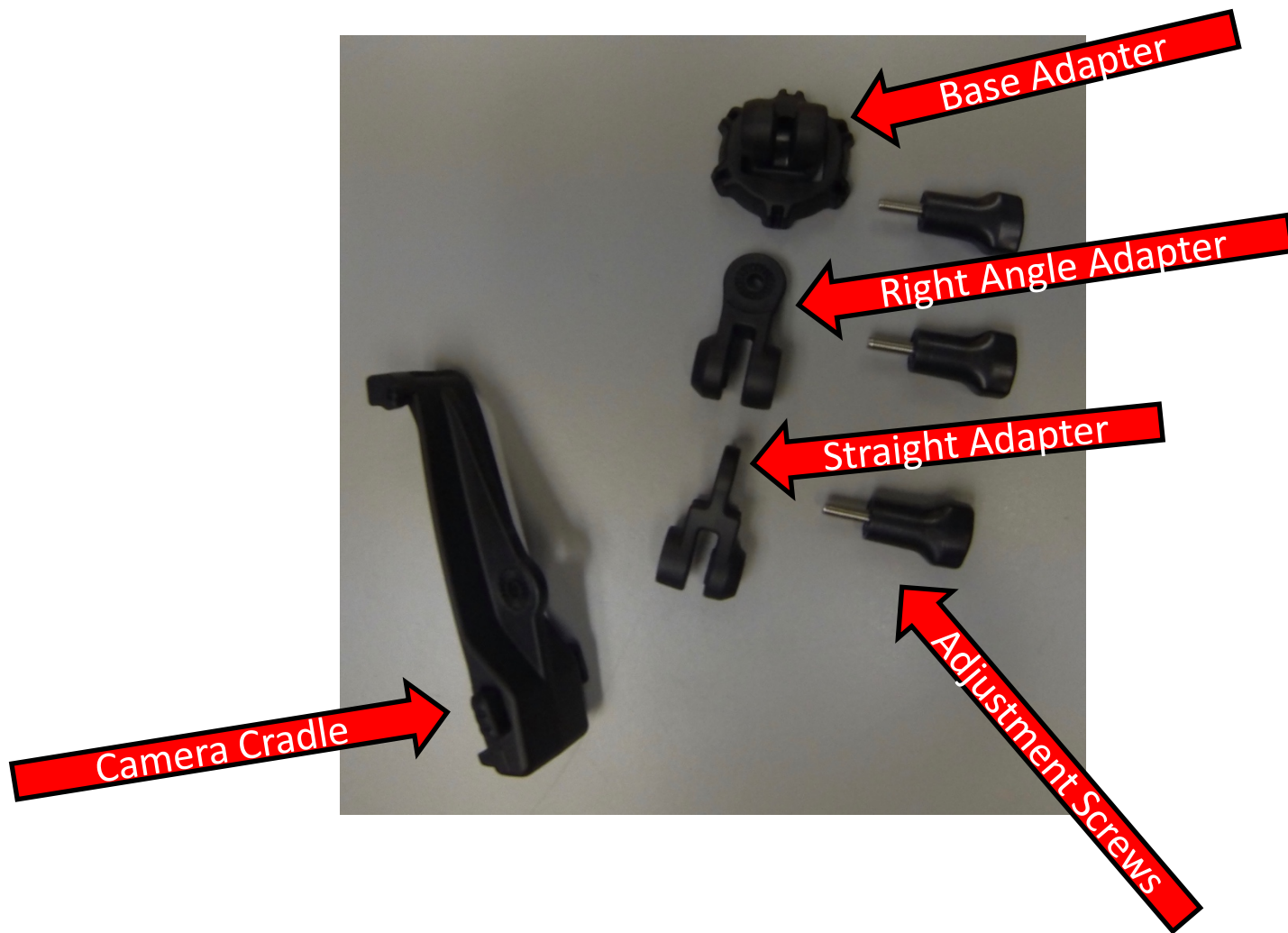


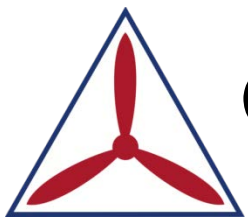
Garmin Virb Kit – Assembling the Mount



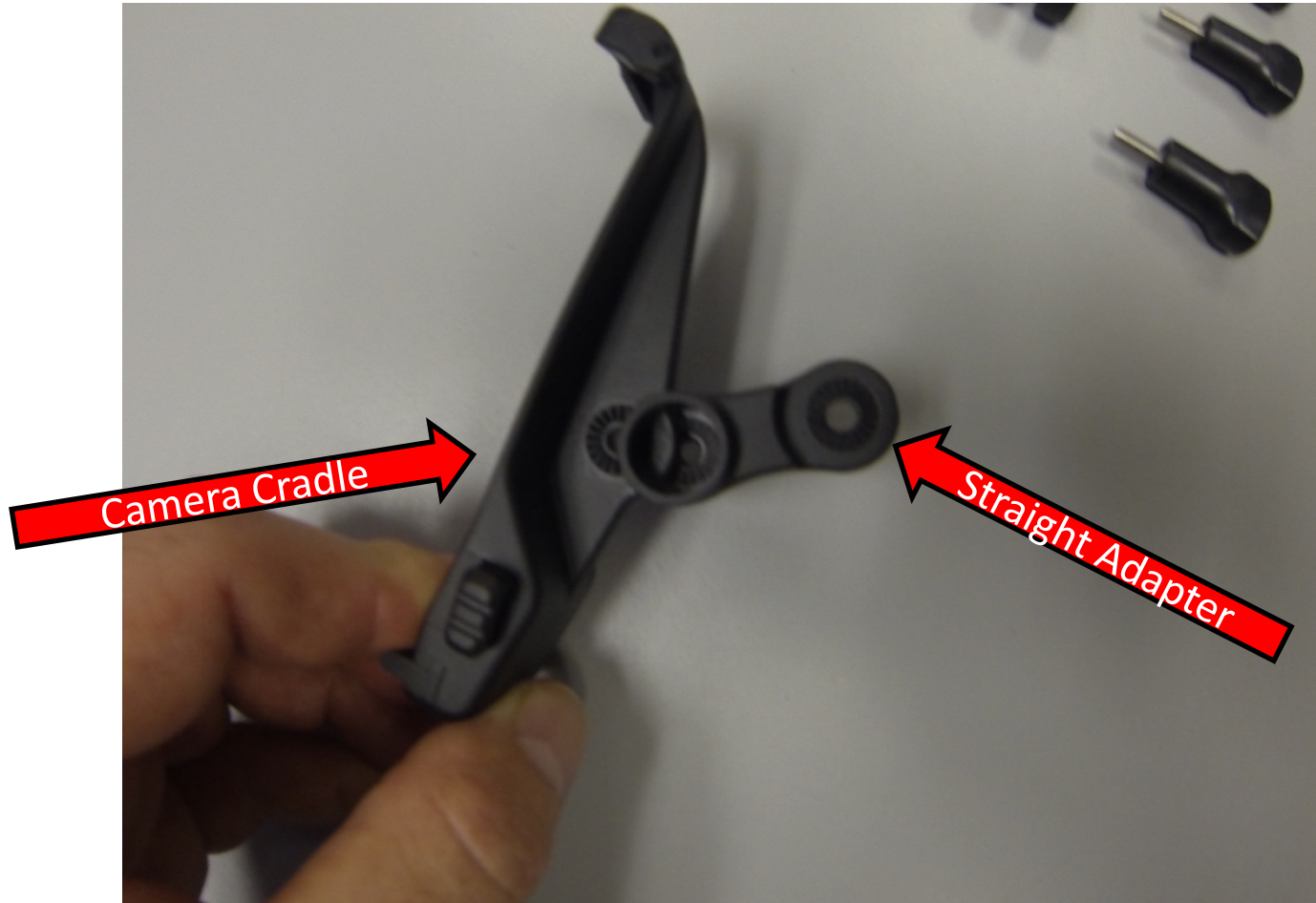


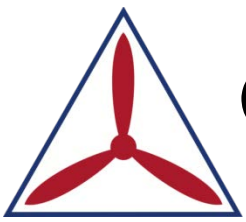
Garmin Virb Kit – Assembling the Mount





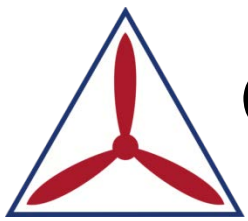
Garmin Virb Kit – Assembling the Mount



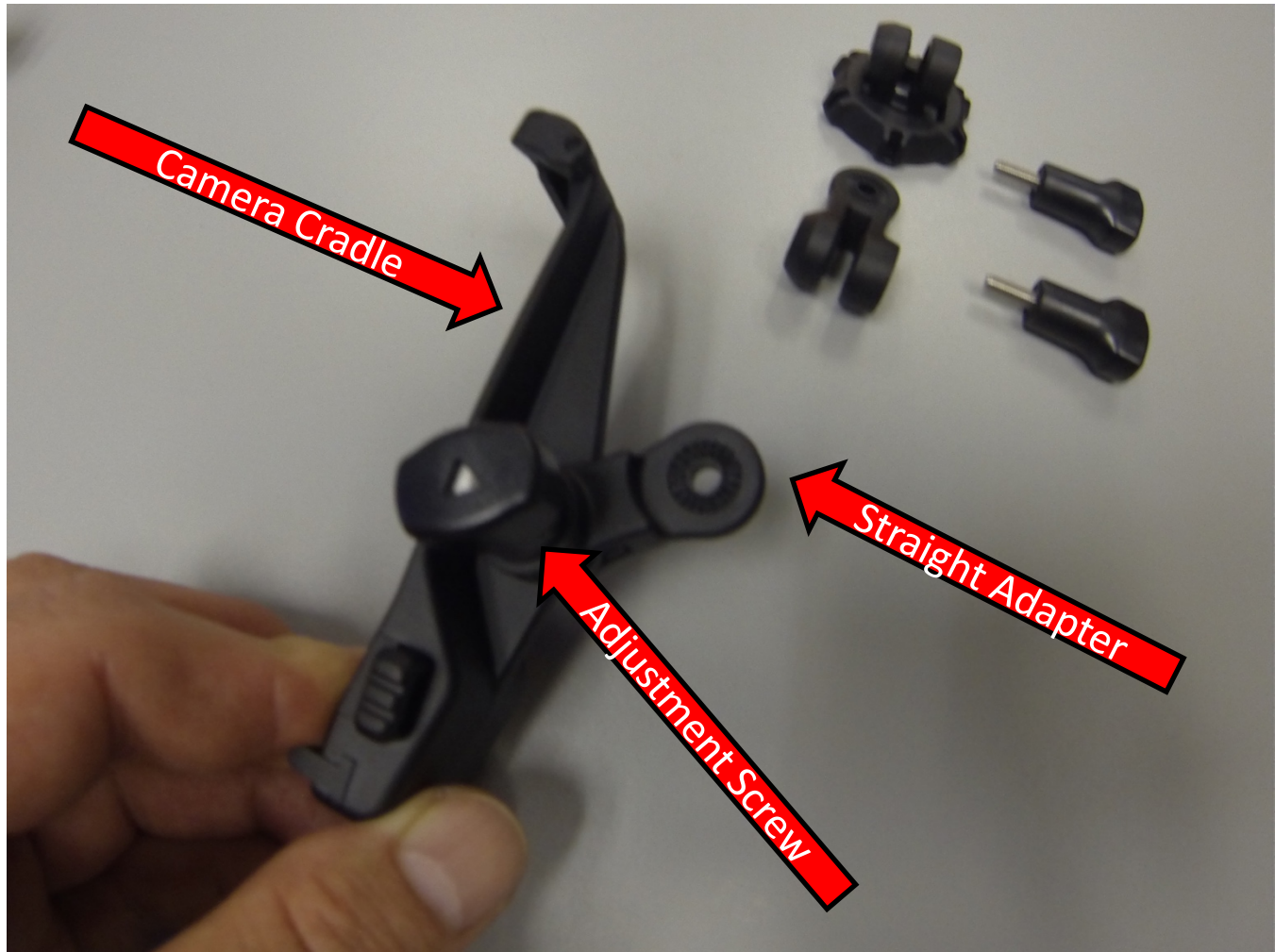


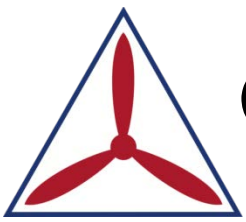
Garmin Virb Kit – Assembling the Mount





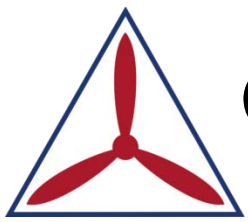
Garmin Virb Kit – Assembling the Mount





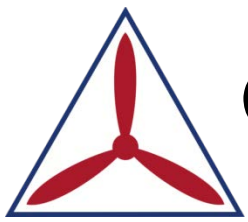
Garmin Virb Kit – Assembling the Mount





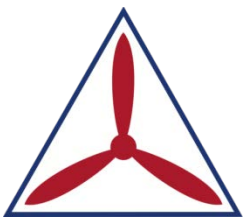
Garmin Virb Kit – Assembling the Mount



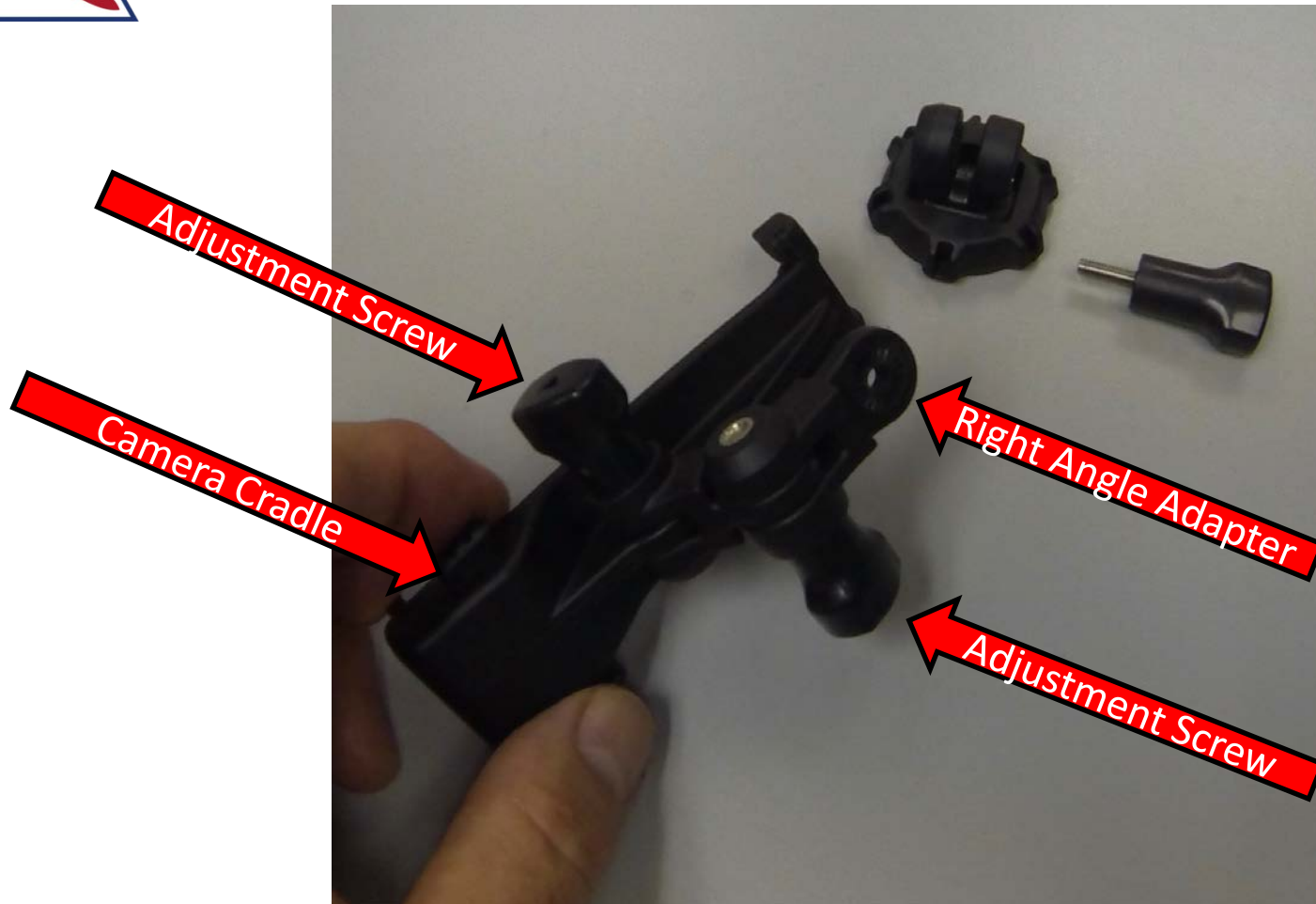


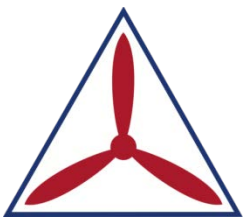
Garmin Virb Kit – Assembling the Mount





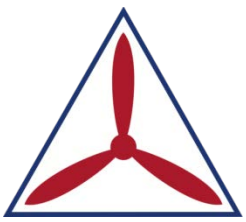
Garmin Virb Kit – Assembling the Mount





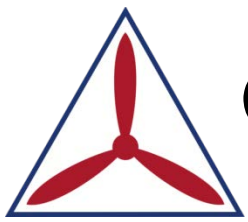
Garmin Virb Kit – Assembling the Mount





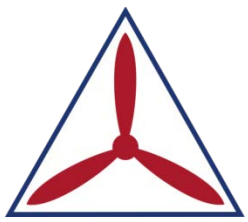
Garmin Virb Kit – Assembling the Mount





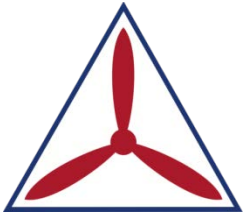
Garmin Virb Kit – Assembling the Mount





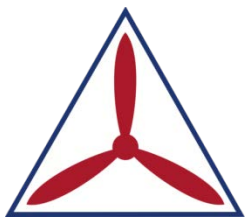
Disaster Photography

- └ Project Definition
- └ Project Goals
- └ Customer Use of Imagery
- └ **Equipment – Garmin Virb Kits**
 - **Adhering to the aircraft wing**
- └ Application
- └ State of Testing / Next Steps



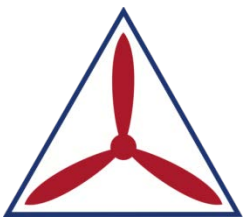
Garmin Virb Kit – Adhering to the wing





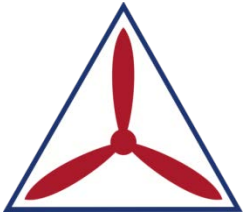
Garmin Virb Kit – Adhering to the wing





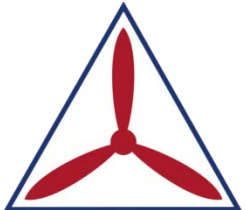
Garmin Virb Kit – Adhering to the wing



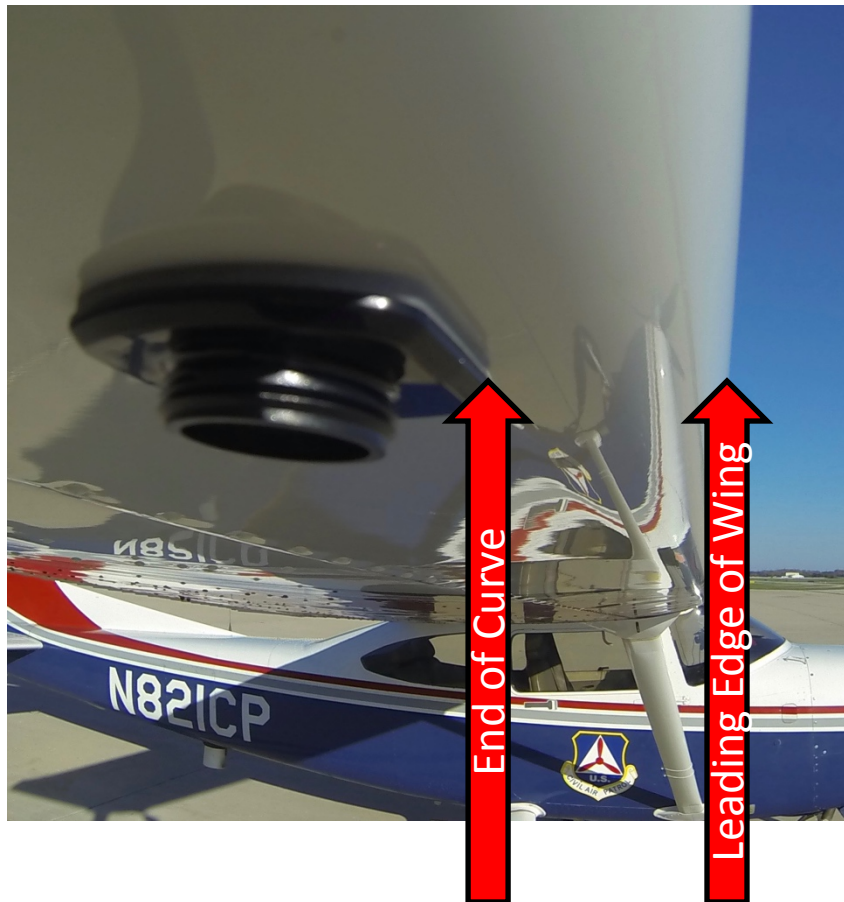


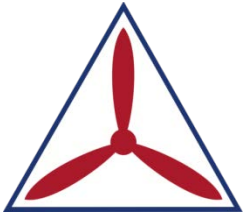
Garmin Virb Kit – Adhering to the wing





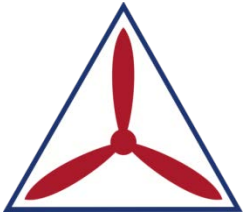
Garmin Virb Kit – Adhering to the wing





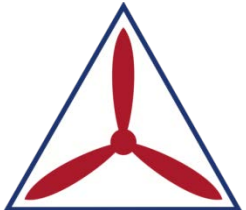
Garmin Virb Kit – Adhering to the wing



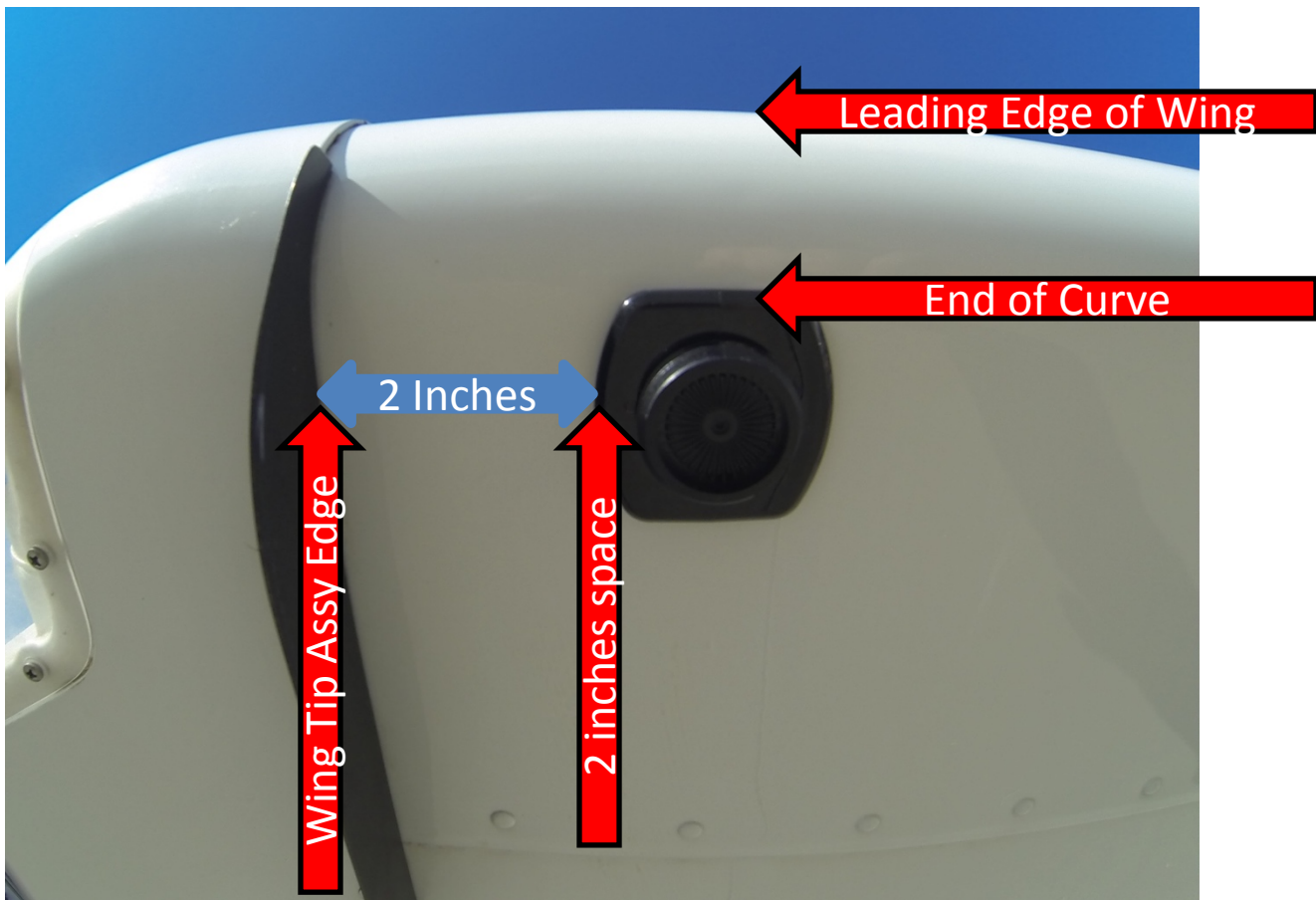


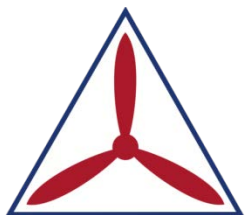
Garmin Virb Kit – Adhering to the wing





Garmin Virb Kit – Adhering to the wing

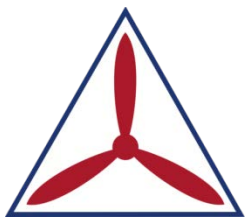




Garmin Virb Kit – Adhering to the wing

External Camera Mounts

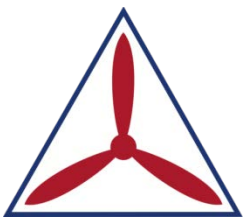
- Clean area of all bugs, wax, oxidation etc.
- Clean with soap and water, dry completely
- Clean with alcohol, dry completely
- Adhere pad, applying pressure to center of pad and around all sides.
- Allow to cure overnight.



Garmin Virb Kit – Adhering to the wing

External Camera Mounts

- FAA Memo(s) on External Camera
 - Not considered Major Alteration
- Logbook entry similar to: “Installation of Garmin Virb mounting pad to right wing, 2 inches inboard from the right wing tip assembly. The mounting pad and when attached the Garmin Virb camera cause no change to flight characteristics of the aircraft. <Name of installer, date>”



Disaster Photography

- └ Project Definition
- └ Project Goals
- └ Customer Use of Imagery
- └ Equipment – Garmin Virb Kits
- └ **Application**
- └ State of Testing / Next Steps

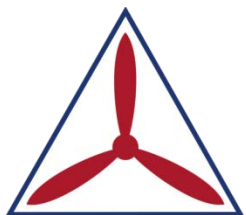


Image Uploader App

- ✂ The FEMA ImageUploader is IEUploader082.zip (v0.82)
- ✂ It requires Adobe AIR to run, you may have to download the Adobe Air application at <http://get.adobe.com/air/> (Mac and PC)
- ✂ After installing the App, go to the “Settings” tab and change the URL to <https://apps.femadata.com/ImageEventsService/API.svc>
- ✂ Your token is: <assigned to your wing by the NOC>
 - Make sure there are no spaces at the end of the token or URL when you add them.
- ✂ After adding the URL and Token, click “Save Settings” and close the App.
- ✂ Close and Re-open the application and you should see events listed in the “Event” drop down list.

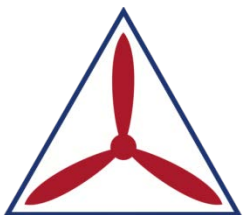


Image Uploader App

Image Uploader

UploadSettings

1

Step 1 - Enter mission details...

Event: CAP Training

Team: 15-T-10373 +New Team

Mission: A0024 +New Mission

2

Step 2 - Choose the NMEA file to upload...

Browse...

Location Count:

Process Time:

LOADING 0%

3

Step 3 - Upload files...

Browse...

Total Images: 0

Uploading: 0

Complete: 0

Start Uploading

Clear

Remove Complete

Retry Errors

LOADING 0%

☐ Auto Refresh Map ☒ Show Thumbnail

Concurrent Uploads: 2

50 km

30 mi

Earthstar Geographics

POWERED BY esri

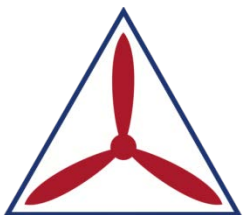


Image Uploader App

Upload

1

Step 1 - Enter mission details...

Event: CAP Training

Team: 15-T-10841

Mission: A0006

+New Team

+New Mission

UPLOADING IMAGES

1) **Step 1** for using ImageUploader:

a. For **Event**:

- For Training missions, use **Event** **CAP Training**. (Unless otherwise instructed.)
- For Actual mission use the supplied **Event** from the NOC.

b. For **Team**, use the **MISSION NUMBER**.

c. For **Mission**, use your **SORTIE NUMBER**.

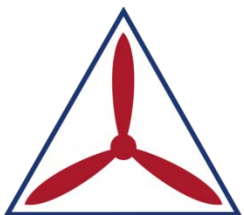


Image Uploader App

Image Uploader

Upload Settings

Step 1 - Enter mission details...

①

Event: CAP Training

Team: 15-T-10373 +New Team

Mission: A0024 +New Mission

Step 2 - Choose the NMEA file to upload...

②

Browse... Location Count:
Process Time:

LOADING 0%

Step 3 - Upload files...

③

Browse... Total Images: 0
Uploading: 0
Complete: 0

Start Uploading Clear Remove Complete Retry Errors

LOADING 0%

☐ Auto Refresh Map ☒ Show Thumbnail
Concurrent Uploads: 2

50 km
30 mi

POWERED BY esri
Earthstar Geographics

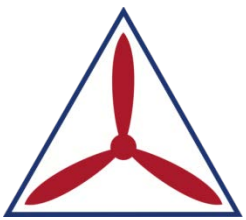



Image Uploader App

Step 2 - Choose the NMEA file to upload...



Location Count:
Process Time:

LOADING 0%

2) **Step 2: (Optional)**

Browse to the folder on your computer that contains your NEMA GPS files is used.
Select and upload.

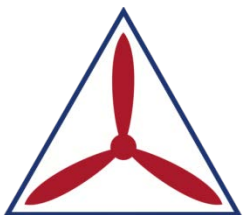


Image Uploader App

Image Uploader

UploadSettings

1

Step 1 - Enter mission details...

Event: CAP Training

Team: 15-T-10373

Mission: A0024

+New Team

+New Mission

2

Step 2 - Choose the NMEA file to upload...

Browse...

Location Count:

Process Time:

LOADING 0%

3

Step 3 - Upload files...

Browse...

Total Images: 0

Uploading: 0

Complete: 0

Start Uploading

Clear

Remove Complete

Retry Errors

LOADING 0%

☐ Auto Refresh Map

☒ Show Thumbnail

Concurrent Uploads: 2

50 km

30 mi

Earthstar Geographics

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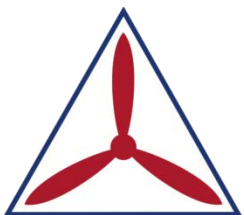



Image Uploader App

Step 3 - Upload files...



Total Images: 0
Uploading: 0
Complete: 0

☐ Auto Refresh Map ☒ Show Thumbnail

Concurrent Uploads: 2

3) Step 3:

Browse to the folder on your computer that contains all of your photos.
Select and upload.

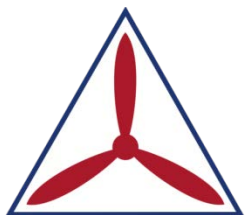


Image Uploader App

Image Uploader

Upload Settings

Step 1 - Enter mission details...

①

Event: CAP Training

Team: 15-T-10373 +New Team

Mission: A0024 +New Mission

Step 2 - Choose the NMEA file to upload...

②

Browse... Location Count:
Process Time:

LOADING 0%

Step 3 - Upload files...

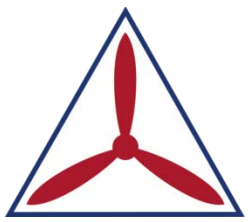
③

Browse... Total Images: 0
Uploading: 0
Complete: 0

Start Uploading Clear Remove Complete Retry Errors

LOADING 0%

☐ Auto Refresh Map ☒ Show Thumbnail
Concurrent Uploads: 2



Online Access to Images

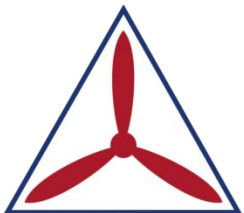
📄 Quick look Public Viewing Website for IMAGES

- Public Site:

<http://apps.femadata.com/ImageEventsPublic>

📄 FEMA GeoPlatform used to view the map and control layers, use this URL

<http://fema.maps.arcgis.com/home/webmap/viewer.html?webmap=990b93d2522441a48bf2aaf536518419>



Online Access to Images

CAP - SC Flooding ▾

Basemap ▾

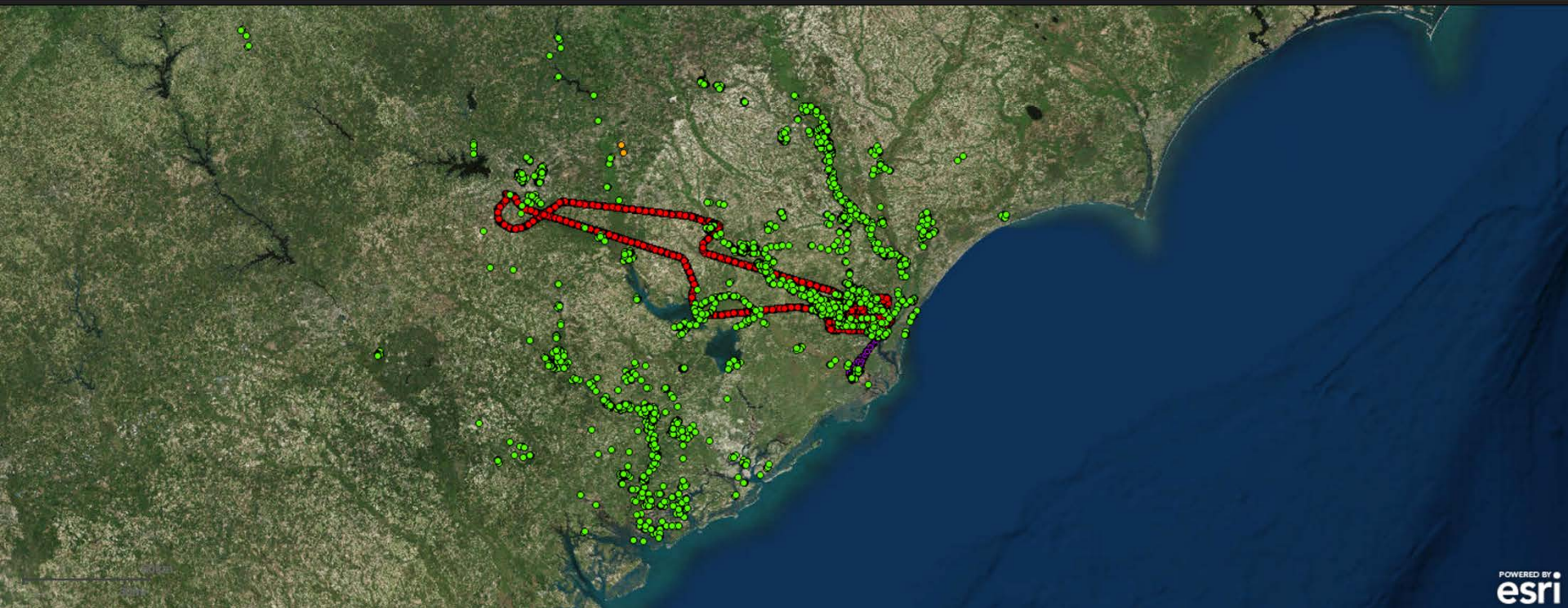
Find Address

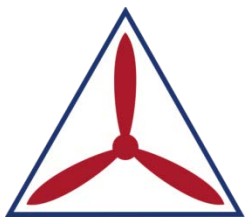


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[Image Ranking](#)

[FEMA GeoPlatform](#)





Online Access to Images

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Modify Map Sign In

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☒ Aerial Oblique

☒ Aerial Oblique Photo Points

☒ Aerial Oblique Target Points

☒ Aerial Oblique Heading Line

☒ Aerial Nadir

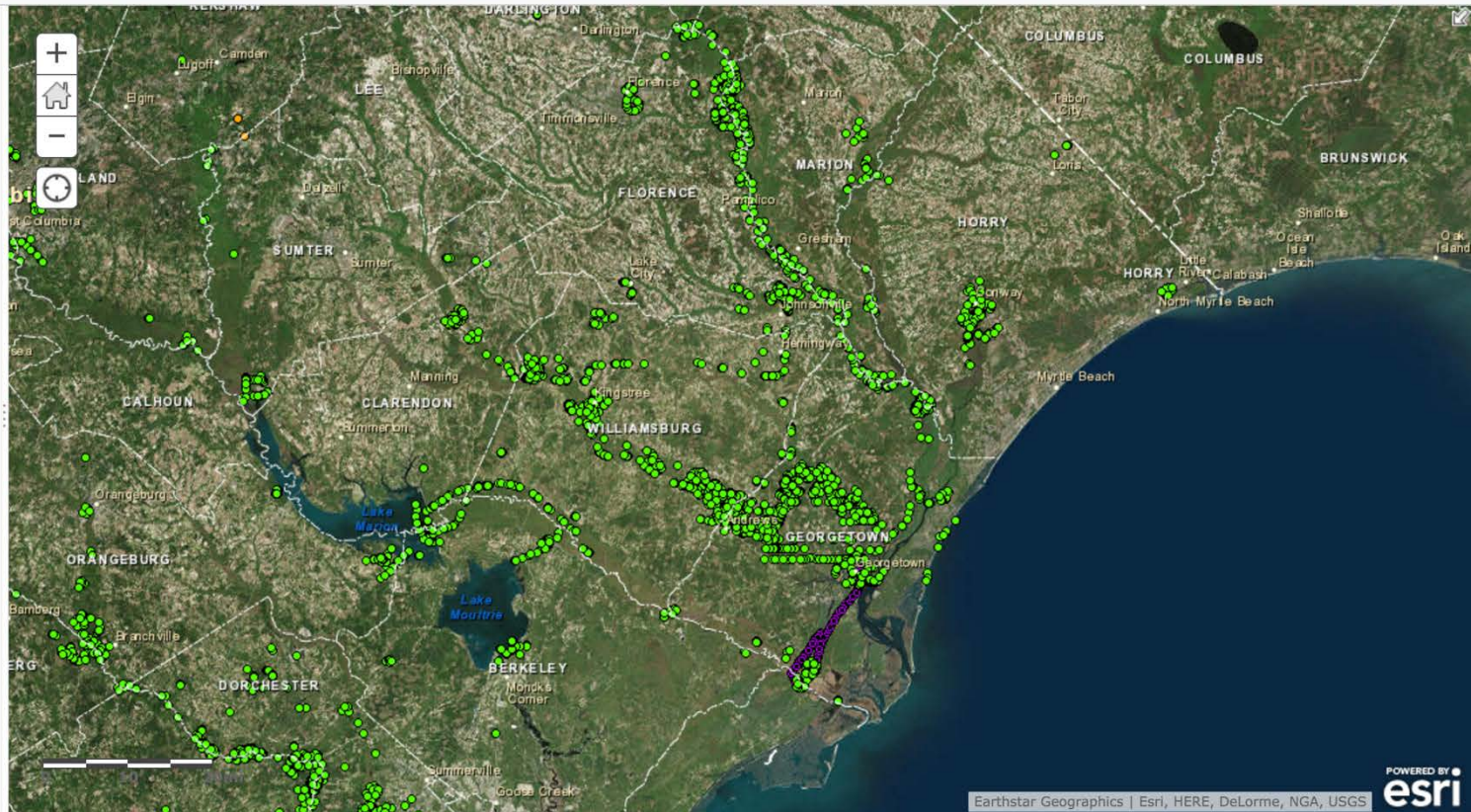
☒ Ground

☒ Ground Photo Points

☒ Ground Target Points

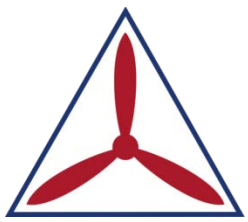
☒ Ground Heading Line

☐ NMEA Points



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Online Access to Images

Image Ranking

CAP - SC Flooding ▾

Low

Moderate

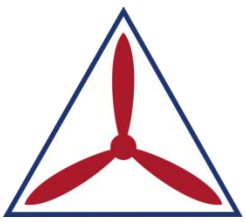
High

Unusable

Skip Image

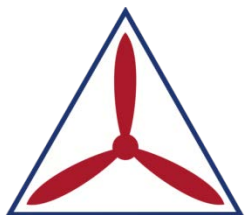
?





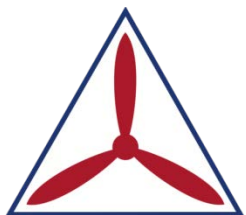
Disaster Photography

- └ Project Definition
- └ Project Goals
- └ Customer Use of Imagery
- └ Equipment Testing
- └ Website
- └ Application
- └ **State of Testing / Next Steps**



Thank You!

- ✂ CAWG Team Testing
- ✂ GLR (IN / OH / IL) Team Testing
- ✂ NESAs Team Testing
- ✂ Coordinated with FEMA / NWS / NOAA / NGA Team members
- ✂ Ongoing testing with expanded teams and technical support specialists.

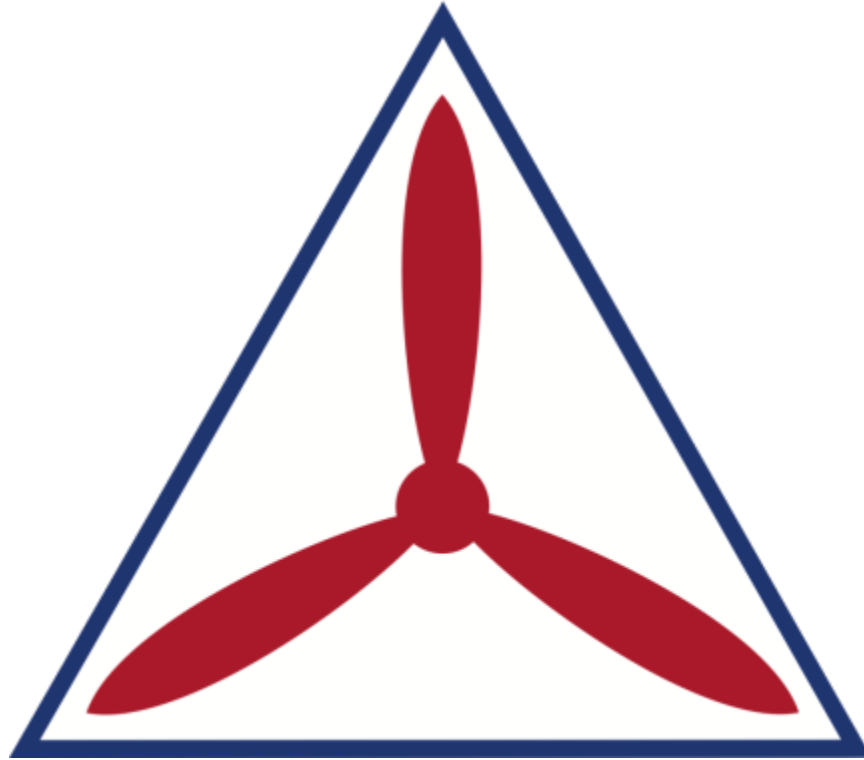


Questions? Feedback?

 Project Officer

- Lt Col Eric Templeton
- 630-261-5873 (mobile)
- etempleton@nesa.cap.gov

Civil Air Patrol



...Citizens Serving Communities!