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## Ethiopian Education Network to Support Agricultural Transformation (EENSAT)

**Course Title: Photogrammetry applied to drone image acquisition**



# Photogrammetry applied to drone image acquisition

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Open Course Ware



An output of EENSAT – Ethiopian Educational Network to Support Agricultural Transformation - 2019

## Contents

1	Introduction.....	2
2	Collected GCP.....	2

## 1 Introduction

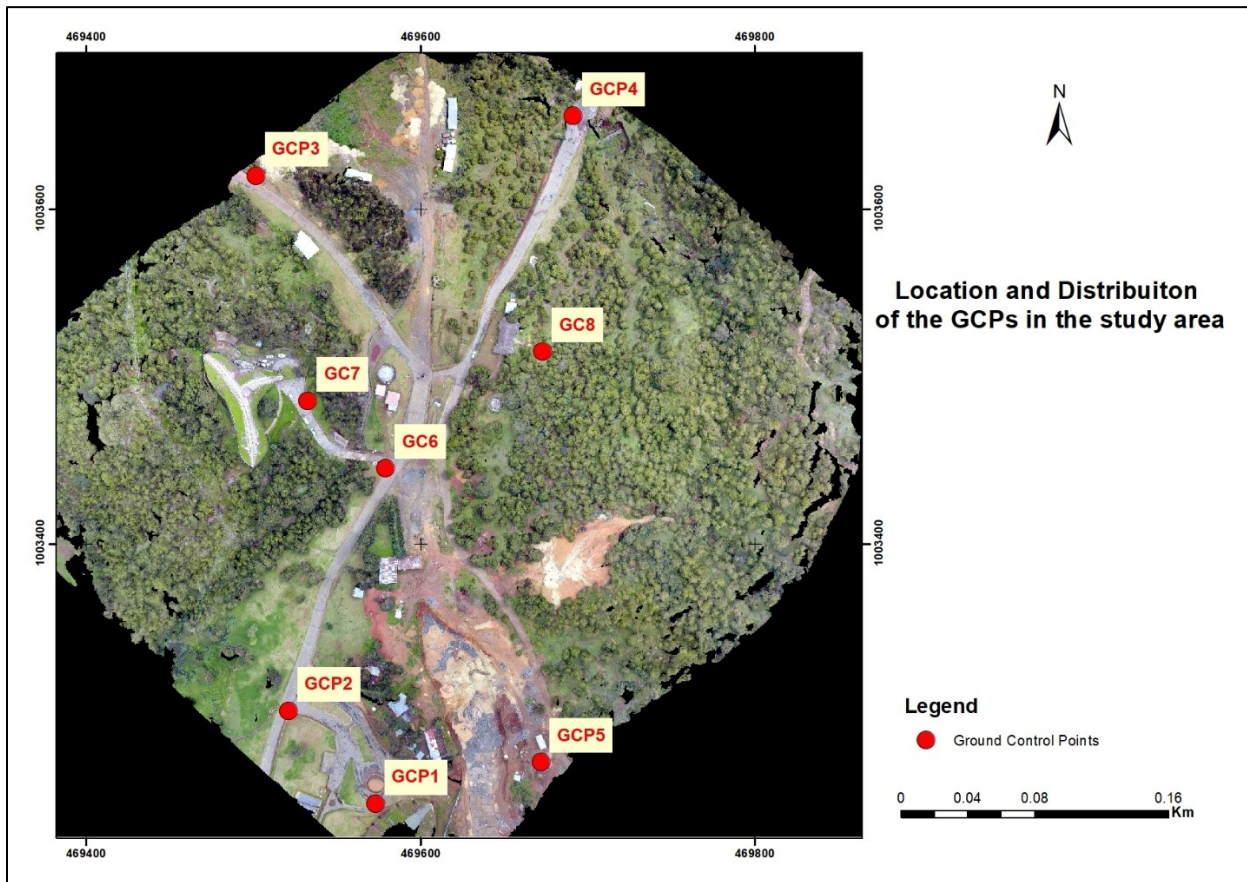
The current report includes the documentation of the Ground Control Points (GCPs) that will be used for the sensor orientation part of the individual assignment/Lesson 5. The GCPs were measured with a differential GPS technique, and the date of the fieldwork is back to 3/8/2020 4:22:45 PM (UTC:3). Time zone: E. Africa Standard Time.

The information regarding the coordinate system of the GCPs are as the following:

- Name: World wide/UTM
- Datum: WGS 1984
- Zone: 37 North
- Geoid: EGM 2008 Ethiopia
- Vertical datum: NA

## 2 Collected GCP

The figure below shows the location and the distribution of GCPs in the study area, and the table indicates the exact location of each ground point in an image and in the field.





The total number of collected ground control points is 9. Point 9 is discarded as its position cannot be measured precisely. For your assignment, please use GCP1, GCP2, GCP3, GCP4 and GCP5 as 3D full ground control points, and GCP6, GCP7 and GCP8 as checkpoints.

Point ID: <b>GCP 1</b>	
Location on Image (Zoom in 1) The point appears in DJI_160.jpg	Location on Image (zoom in 2)
	
Location in the field (picture 1)	Location in the field (picture 2)
	

<p><b>Point ID:</b></p>	<p><b>GCP 2</b></p>
<p><i>Location on Image (zoom in 1)</i> <i>The point can be found in DJI_0162.jpg</i></p>	<p><i>Location image (zoom in2)</i></p>
	
<p><i>Location in the field (picture 1)</i></p>	<p><i>Location in the field (picture 2)</i></p>
	

<p><b>Point ID:</b></p>	<p><b>GCP 3</b></p>
<p><i>Location on Image (zoom in 1)</i> <i>The point can be found in DJI_0073.jpg</i></p>	<p><i>Location on Image (zoom in 2)</i></p>
	
<p><i>Location in the field (picture 1)</i></p>	<p><i>Location in the field (picture 2)</i></p>
	

<b>Point ID:</b>	<b>GCP 4</b>
<i>Location on Image ( zoom in 1) <u>The point can be found in DJI_0051.jpg</u></i>	<i>Location on Image (zoom in 2)</i>
	
<i>Location in the field (picture 1)</i>	<i>Location in the field (picture 2)</i>
	



<p><b>Point ID</b></p>	<p><b>GCP 5</b></p>
<p><i>Location on Image (zoom in 1)</i> <i>The point can be found in DJI_0162.jpg</i></p>	<p><i>Location on Image (zoom in 2)</i></p>
<p><i>Location in the field (picture 1)</i></p>	<p><i>Location in the field (picture 2)</i></p>

<p><b>Point ID:</b></p>	<p><b>GCP 6</b></p>
<p><i>Location on Image (zoom 1)</i> <u>The point can be found in DJI_0044.jpg</u></p>	<p><i>Location on Image ( zoom 2)</i></p>
	
<p><i>Location in the field (picture 1)</i></p>	<p><i>Location in the field (picture 2)</i></p>
	

<p><b>Point ID:</b></p>	<p><b>GCP 7</b></p>
<p><i>Location image (zoom 1)</i> <i>The point can be found in DJI_0148.jpg</i></p>	<p><i>Location on Image (zoom 2)</i></p>
	
<p><i>Location in the field (picture 1)</i></p>	<p><i>Location in the field (picture 2)</i></p>
	

<p><b>Point ID:</b></p>	<p><b>GCP 8</b></p>
<p><i>Location on Image (zoom 1)</i> <i>The point can be found in DJI_0107.jpg</i></p>	<p><i>Location on Image (zoom 2)</i></p>
	
<p><i>Location in the field (picture 1)</i></p>	<p><i>Location in the field (picture 2)</i></p>
	

<b>Point ID:</b>	<b>GCP 9</b>
<u>Will be discarded</u> as it cannot be located precisely on the Image ( the exact position is not clear) <u>The point can be found in DJI_ 0107.jpg</u>	
<i>Location in the field (picture 1)</i>	<i>Location in the field (picture 2)</i>
	