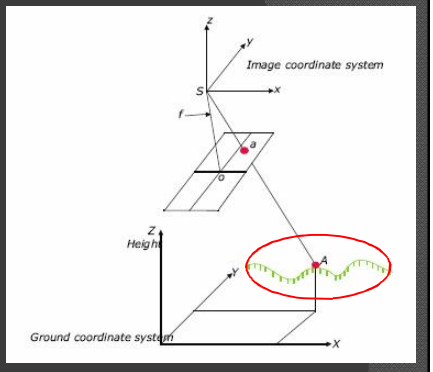
Ground Space Coordinates and Photogrammetry

Ground Space and Ground Coordinate Systems

Geocentric/Topocentric Coordinate Systems

Terrestrial Photogrammetry Coordinate Systems

Ground Space + Coordinate System = Ground Coordinate System



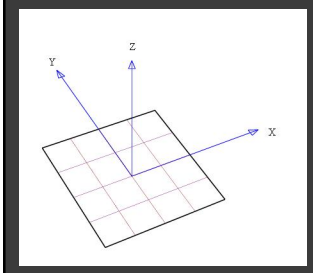
Ground space is the real world area of an image

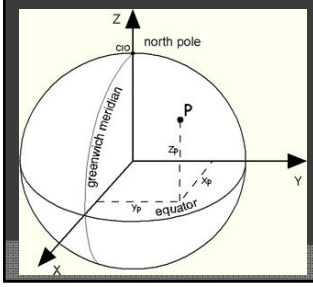
Coordinate systems organize ground space and offer a means of precise positioning

Ground space is three dimensional as are ground coordinate systems – (X, Y, Z)

X, Y values from known coordinate system – Z value from elevation data

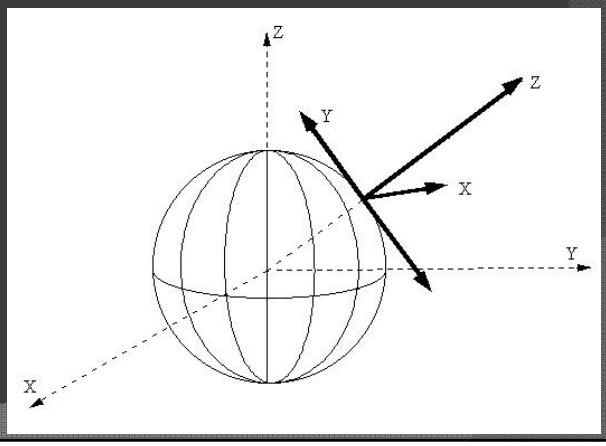
Geocentric and Topocentric Coordinate Systems



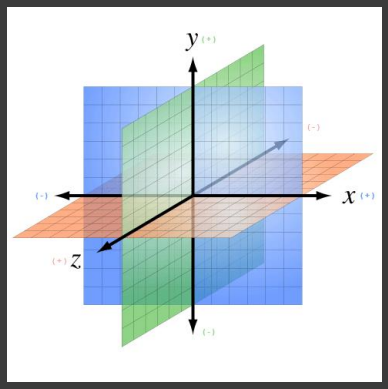


Account for the curvature of the Earth

Three axes remain perpendicular and follow a right hand rule.



Terrestrial Photogrammetry Coordinate Systems

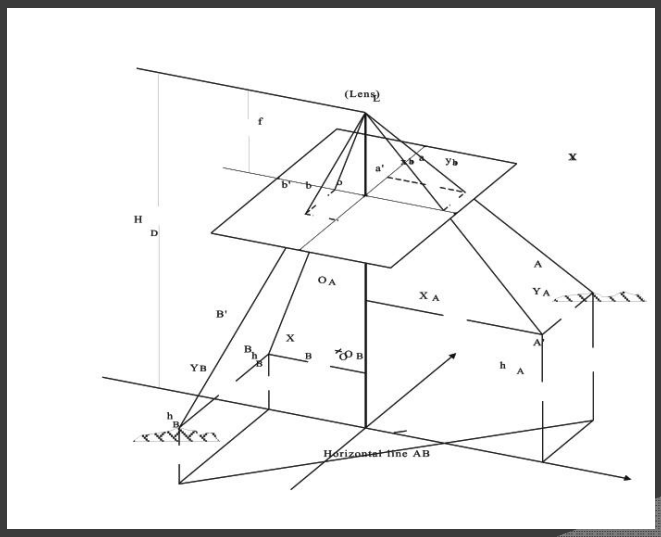


Photogrammetry in which the camera or sensor is supported on the Earth's surface

Camera or sensor is fixed and its parameters can be measured

Typically terrestrial photogrammetry will employ a Cartesian coordinate system.

With a smaller study area a localized coordinate system may be more appropriate



Ground coordinate systems are required to relate ground space to image space

Questions

1. Photogrammetry involves a three part relationship between the ground and what two remaining variables?

2. In regards to terrestrial photogrammetry, most ground space coordinate systems are defined using a localized _____ coordinate system.

True or False

3. Ground coordinate systems used for terrestrial photogrammetry are identical to those used for aerial photogrammetry.

4. There is little need to account for the curvature of the Earth's surface, therefore most photogrammetric programs do not account for it.

References

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Images

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