

NAIP_2011_3ft_color_wsps_83h_img (ImageServer)

Metadata:

Identification_Information:

Citation:

Citation_Information:

Originator: USDA-FSA-APFO Aerial Photography Field Office

Publication_Date: 20111103

Title: NAIP Digital Ortho Photo Image

Geospatial_Data_Presentation_Form: remote-sensing image

Publication_Information:

Publication_Place: Salt Lake City, Utah

Publisher: USDA-FSA-APFO Aerial Photography Field Office

Description:

Abstract:

This data set contains imagery from the National Agriculture Imagery Program (NAIP). NAIP acquires digital ortho imagery during the agricultural growing seasons in the continental U.S.. A primary goal of the NAIP program is to enable availability of of ortho imagery within one year of acquisition. NAIP provides four main products: 1 meter ground sample distance (GSD) ortho imagery rectified to a horizontal accuracy of within +/- 5 meters of reference digital ortho quarter quads (DOQQ's) from the National Digital Ortho Program (NDOP); 2 meter GSD ortho imagery rectified to within +/- 10 meters of reference DOQQs; 1 meter GSD ortho imagery rectified to within +/- 6 meters to true ground; and, 2 meter GSD ortho imagery rectified to within +/- 10 meters to true ground. The tiling format of NAIP imagery is based on a 3.75' x 3.75' quarter quadrangle with a 300 meter buffer on all four sides. NAIP quarter quads are formatted to the UTM coordinate system using NAD83. NAIP imagery may contain as much as 10% cloud cover per tile.

Purpose:

NAIP imagery is available for distribution within 60 days of the end of a flying season and is intended to provide current information of agricultural conditions in support of USDA farm programs. For USDA Farm Service Agency, the 1 meter GSD product provides an ortho image base for Common Land Unit boundaries and other data sets. The 1 meter NAIP imagery is generally acquired in projects covering full states in cooperation with state government and other federal agencies who use the imagery for a variety of purposes including land use planning and natural resource assessment. With an annual cycle, NAIP is also used for disaster response often providing the most current pre-event imagery. While suitable for a variety of uses the 2 meter GSD NAIP imagery is primarily intended to assess crop condition and compliance to USDA farm program conditions. The 2 meter imagery is generally acquired only for agricultural areas within state projects.

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 20110706

Currentness_Reference: Ground Condition

Status:

Progress: Complete

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Maintenance_and_Update_Frequency: Irregular
Spatial_Domain:
 Bounding_Coordinates:
 West_Bounding_Coordinate: -116.9375
 East_Bounding_Coordinate: -116.8750
 North_Bounding_Coordinate: 46.0000
 South_Bounding_Coordinate: 45.9375
Keywords:
 Theme:
 Theme_Keyword_Thesaurus: None
 Theme_Keyword: farming
 Theme_Keyword: Digital Ortho rectified Image
 Theme_Keyword: Ortho Rectification
 Theme_Keyword: Quarter Quadrangle Centered
 Theme_Keyword: NAIP
 Theme_Keyword: Aerial Compliance
 Theme_Keyword: Compliance
 Place:
 Place_Keyword_Thesaurus: Geographic Names Information System
 Place_Keyword: WA
 Place_Keyword: Asotin
 Place_Keyword: 53003
 Place_Keyword: WA003
 Place_Keyword: ASOTIN CO WA FSA
 Place_Keyword: 4511601
 Place_Keyword: JIM CREEK BUTTE, NE
 Place_Keyword: JIM CREEK BUTTE
Access_Constraints: There are no limitations for access.
Use_Constraints:
 Imagery may be replaced to address defects found in a small number of products through quality assurance processes. Imagery containing defects that require the acquisition of new imagery, such as excessive cloud cover, specular reflectance, etc., will not be replaced within a NAIP project year.
Point_of_Contact:
 Contact_Information:
 Contact_Organization_Primary:
 Contact_Organization: Aerial Photography Field Office (APFO)
 Contact_Address:
 Address_Type: mailing and physical address
 Address: 2222 West 2300 South
 City: Salt Lake City
 State_or_Province: Utah
 Postal_Code: 84119-2020
 Country: USA
 Contact_Voice_Telephone: 801-844-2922
 Contact_Facsimile_Telephone: 801-956-3653
 Contact_Electronic_Mail_Address: apfo.sales@slc.usda.gov
Browse_Graphic:
 Browse_Graphic_File_Name: None
 Browse_Graphic_File_Description: None
 Browse_Graphic_File_Type: None
Native_Data_Set_Environment: Unknown

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Data_Quality_Information:

Logical_Consistency_Report:

NAIP 3.75 minute tile file names are based on the USGS quadrangle naming convention.

Completeness_Report: None

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

FSA Digital Orthophoto Specs.

Lineage:

Source_Information:

Source_Citation:

Citation_Information:

Originator: USDA-FSA-APFO Aerial Photography Field Office

Publication_Date: 20111103

Title: JIM CREEK BUTTE, NE

Geospatial_Data_Presentation_Form: remote-sensing image

Type_of_Source_Media: UnKnown

Source_Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:

Calendar_Date: 20110706

Source_Currentness_Reference:

Aerial Photography Date for aerial photo source.

Source_Citation_Abbreviation: Georectified Image

Source_Contribution: Digital Georectified Image.

Process_Step:

Process_Description:

1.0m Digital imagery was collected at a nominal GSD of using three Cessna 441 aircrafts flying at an average flight height of 9052m AGL. N14NW, N16NW flew with Leica Geosystem's ADS80/SH82 digital sensors sn30017 & sn30034 both with firmware 3.15. N911PJ flew with Leica Geosystem's ADS40/SH52 digital sensor sn30014 with firmware v2.14. Each sensor collected 11 image bands. PanF27A, PanF02A and PanB14A panchromatic bands with a spectral range of 465-676nm. RedN00a and RedB16a with a spectral range of 604-664nm. GrnN00a and GrnB16a with a spectral range of 533-587nm. BluN00a and BluB16a with a spectral range of 420-492nm and Near-infrared bands NirN00a and NirB16a with a spectral range of 833-920nm.

The CCD arrays have a pixel size of 6.5 microns in a 12000x1 format. Both the CCD's and the A/D convertors have a dynamic range of 12bits. The data is stored in 16bit format. The ADS is a push-broom sensor and the ground footprint of the imagery at NAIP scale is 12km

wide by the length flightline. The maximum flightline length is limited to approximately 240km. The factory calibrations and IMU alignments for each sensor (sn30017 8/6/2009, sn30014 5/15/2008 and sn30034 12/7/2007) were tested and verified by in-situ test flights before the start of the project. The Leica ADS Flight Planning and Evaluation Software (FPES) is used to develop the flight acquisition plans.

Flight acquisition sub blocks are designed first to define the GNSS base station logistics, and to break the project up into manageable acquisition units. The flight acquisition sub blocks are designed based on the specified acquisition season, native UTM zone of the DOQQs, flight line length limitations (to ensure sufficient performance of the IMU solution) as well as air traffic restrictions in the area. Once the sub blocks have been delineated they are brought into FPES for flight line design. The design parameters used in FPES will be 30% lateral overlap and 1.0m resolution. The flight lines have been designed with a north/south orientation. The design takes into account the latitude of the state, which affects line spacing due to convergence as well as the terrain. SRTM elevation data is used in the FPES design to ensure the 1m GSD is achieved over all types of terrain. The raw data was downloaded from the sensors after each flight using Leica XPro software. The imagery was then georeferenced using the 200Hz GPS/INS data creating an exterior orientation for each scan line (x/y/z/o/p/k). Technicians precisely measured tie points in 3 bands/looks (Back/Nadir/Forward) for each line using Leica Xpro software. The resulting point data and exterior orientation data were used to perform a full bundle adjustment with ORIMA software. Blunders were removed, and additional tie points measured in weak areas to ensure a robust solution. Once the point data was clean and point coverage was acceptable, photo-identifiable GPS-surveyed ground control points were introduced into the block adjustment. The bundle adjustment process produces revised exterior orientation data for the sensor with GPS/INS, datum, and sensor calibration errors modeled and removed. Using the revised exterior orientation from the bundle adjustment, orthorectified image strips were created with Xpro software and the May 2011 USGS 10m NED DEM. The Xpro orthorectification software applies an atmospheric-BRDF radiometric correction to the imagery. This correction compensates

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for atmospheric absorption, solar illumination angle and bi-directional reflectance. The orthorectified strips were then overlaid with each other and the ground control to check accuracy. Once the accuracy of

the orthorectified image strips were validated the strips were then imported into Inpho's OrthoVista 4.5 package which was used for the final radiometric balance, mosaic, and DOQQ sheet creation. The final DOQQ sheets, with a 300m buffer and a ground pixel resolution of 1m were then combined and compressed to create the county wide CCMS.

Process_Date: 20111103
Spatial_Data_Organization_Information:
 Indirect_Spatial_Reference: Asotin County, WA
 Direct_Spatial_Reference_Method: Raster
 Raster_Object_Information:
 Raster_Object_Type: Pixel
 Row_Count: 1
 Column_Count: 1
 Spatial_Reference_Information:
 Horizontal_Coordinate_System_Definition:
 Planar:
 Grid_Coordinate_System:
 Grid_Coordinate_System_Name: Universal Transverse Mercator
 Universal_Transverse_Mercator:
 UTM_Zone_Number: 11
 Transverse_Mercator:
 Scale_Factor_at_Central_Meridian: 0.9996
 Longitude_of_Central_Meridian: -117.0
 Latitude_of_Projection_Origin: 0.0
 False_Easting: 500000
 False_Northing: 0.0
 Planar_Coordinate_Information:
 Planar_Coordinate_Encoding_Method: row and column
 Coordinate_Representation:
 Abscissa_Resolution: 1
 Ordinate_Resolution: 1
 Planar_Distance_Units: meters
 Geodetic_Model:
 Horizontal_Datum_Name: North American Datum of 1983
 Ellipsoid_Name: Geodetic Reference System 80 (GRS 80)
 Semi-major_Axis: 6378137
 Denominator_of_Flattening_Ratio: 298.257
 Entity_and_Attribute_Information:
 Overview_Description:
 Entity_and_Attribute_Overview:
 32-bit pixels, 4 band color(RGBIR) values 0 - 255
 Entity_and_Attribute_Detail_Citation: None
 Distribution_Information:
 Distributor:
 Contact_Information:
 Contact_Person_Primary:
 Contact_Person: Supervisor Customer Services Section

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Contact_Organization:

USDA-FSA-APFO Aerial Photography Field Office

Contact_Address:

Address_Type: mailing and physical address

Address: 2222 West 2300 South

City: Salt Lake City

State_or_Province: Utah

Postal_Code: 84119-2020

Country: USA

Contact_Voice_Telephone: 801-844-2922

Contact_Facsimile_Telephone: 801-956-3653

Contact_Electronic_Mail_Address: apfo.sales@slc.usda.gov

Distribution_Liability:

In no event shall the creators, custodians, or distributors of this information be liable for any damages arising out of its use (or the inability to use it).

Standard_Order_Process:

Digital_Form:

Digital_Transfer_Information:

Format_Name: GeoTIFF - Georeferenced Tagged Image File Format

Format_Information_Content: Multispectral 4-band

Digital_Transfer_Option:

Offline_Option:

Offline_Media: CD-ROM

Recording_Format: ISO 9660 Mode 1 Level 2 Extensions

Fees:

Contact the Aerial Photography Field Office for more information

Resource_Description:

m_4511601_ne_11_1_20110706_20111004.tif

Metadata_Reference_Information:

Metadata_Date: 20111103

Metadata_Contact:

Contact_Information:

Contact_Organization_Primary:

Contact_Organization:

USDA-FSA-APFO Aerial Photography Field Office

Contact_Address:

Address_Type: mailing and physical address

Address: 2222 West 2300 South

City: Salt Lake City

State_or_Province: Utah

Postal_Code: 84119-2020

Country: USA

Contact_Voice_Telephone: 801-844-2922

Metadata_Standard_Name:

Content Standard for Digital Geospatial Metadata

Metadata_Standard_Version: FGDC-STD-001-1998