



Remotely Sensed Data Indexes

Spatial Data Standard





Aerial photograph of the Yaquina Head lighthouse taken from an Unmanned Aircraft System.

Document Revisions

Revision	Date	Author	Description	Affected Pages
1.0	3/26/2021	Corey Plank, Dana Baker-Allum	Initial Release	All

Navigation



This document uses hyperlinks to display additional information on topics. External links are displayed with an underline. Internal links are blue text, not underlined. After clicking on an internal link, press the **Alt**  **+left arrow**  keys to return to the original location from the target location.

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1 General Information

This theme depicts the spatial coverage of remotely sensed data on the earth surface. Remotely sensed data includes panchromatic, multi-spectral, and hyperspectral images and elevation or bathymetric data obtained through Light Detection and Ranging (LiDAR), Radio Detection and Ranging (RADAR), or through other sensors. The Remotely Sensed Data Indexes theme includes points depicting the center points of aerial photographs (AP_CENTER_POINT), lines depicting aerial photography flight lines (AP_FLIGHT_LINE), polygons depicting the spatial footprints of individual aerial photographs, LiDAR point files, and satellite images (AP_FOOTPRINT_POLY, LIDAR_FOOTPRINT_POLY, SATELLITE_FOOTPRINT_POLY), and polygons representing the spatial footprints of remote sensing projects (AP_PROJECT_POLY, LIDAR_PROJECT_POLY, SATELLITE_PROJECT_POLY).

- Dataset (Theme) Name: Remotely Sensed Data Indexes (RSI)
- Dataset (Feature Class): AP_CENTER_POINT, AP_FLIGHT_LINE, AP_FOOTPRINT_POLY, AP_PROJECT_POLY, LIDAR_FOOTPRINT_POLY, LIDAR_PROJECT_POLY, SATELLITE_FOOTPRINT_POLY, SATELLITE_PROJECT_POLY

1.1 Roles and Responsibilities

Table 1 Roles and Responsibilities

Roles	Responsibilities
State Data Steward	The State Data Steward responsibilities include approving data standards and business rules, developing Quality Assurance/Quality Control procedures, identifying potential Privacy issues, and managing that data as a corporate resource. The State Data Steward coordinates with field office data stewards, the State Data Administrator, Geographic Information System (GIS) coordinators, and national data stewards. The State Data Steward reviews geospatial metadata for completeness and quality.
GIS Technical Lead	The GIS Technical Lead works with data stewards to convert business needs into GIS applications and derive data requirements and participates in the development of data standards. The GIS technical lead coordinates with system administrators and GIS coordinators to manage the GIS databases. The GIS technical lead works with data editors to ensure the consistency and accordance with the established data standards of data input into the enterprise Spatial Database Engine (SDE) geodatabase. The GIS technical lead provides technical assistance and advice on GIS analysis, query, and display of the dataset.
State Data Administrator	The State Data Administrator provides information management leadership, data modeling expertise, and custodianship of the state data models. The State Data Administrator ensures compliance with defined processes for development of data standards and metadata, and process consistency and completeness. The State Data Administrator is responsible for making data standards and metadata accessible to all users. The State Data Administrator coordinates with data stewards and GIS coordinators to respond to national spatial data requests.
State Records Administrator	The State Records Administrator assists the state data steward to identify any privacy issues related to spatial data. The state records administrator also provides direction and guidance on data release and fees. The state records administrator classifies data under the proper records retention schedule and determines the appropriate Freedom of Information Act category.

1.2 FOIA Category

Public

1.3 Records Retention Schedule

The DRS/GRS/BLM Combined Records Schedule, under Schedule 20/52a3 (Electronic Records/Geographic Information Systems), lists this theme as one of the system-centric themes that are significant for BLM's mission that must be permanently retained.

"PERMANENT. Cutoff at the end of each Fiscal Year (FY) or when significant changes and additions have been made, before and after the change. Use BLM 20/52a. Transfer to the National Archives every three years after cutoff. Under the instruction in 36 CFR 1235.44-50 or whichever guidance is in place at the time of the transfer. Submissions are full datasets and are in addition to, not replacements of, earlier submissions."

Oregon/Washington (OR/WA) Bureau of Land Management (BLM) Guidebook for Management of Geospatial Data (v1) Section 15.2 - Corporate Data Online Archives prescribes:

"Vector annual archives are retained online for 12 years. Each year, data that has reached 12 years old is copied off-line to be retained until no longer needed (determined by data stewards and program leads) with format and readability maintained in a five (5) year "tech refresh" update cycle."

1.4 Security/Access/Sensitivity

The Remotely Sensed Data Indexes theme does not require any additional security other than that provided by the General Support System (the hardware/software infrastructure of the OR/WA BLM).

This dataset is not sensitive and there are no restrictions on access to this data, either from within the BLM or external to the BLM. This dataset falls under the standard Records Access Category 1A-Public Data.

There are no privacy issues or concerns associated with these data themes. A privacy impact assessment was completed for this dataset on 5/15/2020.

1.5 Keywords

Keywords that can be used to locate this dataset include:

- BLM Thesaurus: Geospatial, primaryData, Forest, Range, Vegetation
- Additional keywords: Aerial Photography, Imagery, Satellite, LiDAR, RADAR, Remote Sensing, Hyperspectral, Drone, Unmanned Aircraft System, UAS, Bathymetry, Contour, Remotely Sensed Data
- ISO Thesaurus: elevation, environment, geoscientificInformation, imageryBaseMapsEarthCover, inlandWaters

1.6 Subject Function Codes

BLM Subject Function codes used to describe this dataset include:

- 1283 - Data Administration
- 9162 - Aerial Photography
- 9163 – Remote Sensing
- 9167 – Geographic Information System (GIS)

2 Dataset Overview

2.1 Usage

This data is used for describing and locating remotely sensed data from imagery and elevation acquisition projects. Layer files are used to simplify searches by such means as lumping photography by decades or separating projects with large footprints.

2.2 Sponsor/Affected Parties

The sponsor for this data set is the Deputy State Director for the Division of Management Services.

Affected parties include both governmental and non-governmental entities. All data referenced by the Remotely Sensed Data Indexes theme are in the public domain and are used for reference or numerous research and analysis purposes.

BLM uses this theme to identify availability and areas covered by historical aerial photography or other remotely sensed data.

2.3 Relationship to Other Datasets, Databases, or Files

Imagery and data represented by points, lines, and polygons in the Remotely Sensed Data Indexes dataset may also occur in:

- USGS Earth Explorer site <https://earthexplorer.usgs.gov>
- Oregon DOGAMI LiDAR Viewer <https://gis.dogami.oregon.gov/maps/lidarviewer/>
- The Washington LiDAR Portal <https://lidarportal.dnr.wa.gov>
- The USDA Geospatial Data Gateway <https://datagateway.nrcs.usda.gov/>

2.4 Data Category/Architecture Link

This data theme is a portion of the Oregon Data Framework (ODF) shown in Figure 1, Oregon Data Framework (ODF) Overview on page 9. The illustration is a simplified schematic of the entire ODF showing the overall organization and entity inheritance. The ODF utilizes the concept of inheritance to define specific instances of data. The ODF divides all OR/WA resource-related data into three general categories:

- Activities
- Resources
- Boundaries

These general categories are broken into sub-categories that inherit spatial characteristics and attributes from their parent category. These sub-categories may be further broken into more specific groups until the basic data set cannot be further sub-divided. Those basic data sets inherit all characteristics of all groups/categories above them. The basic data sets are where physical data gets populated. Those groups/categories above them do not contain actual data but set parameters which all data of that type must follow.

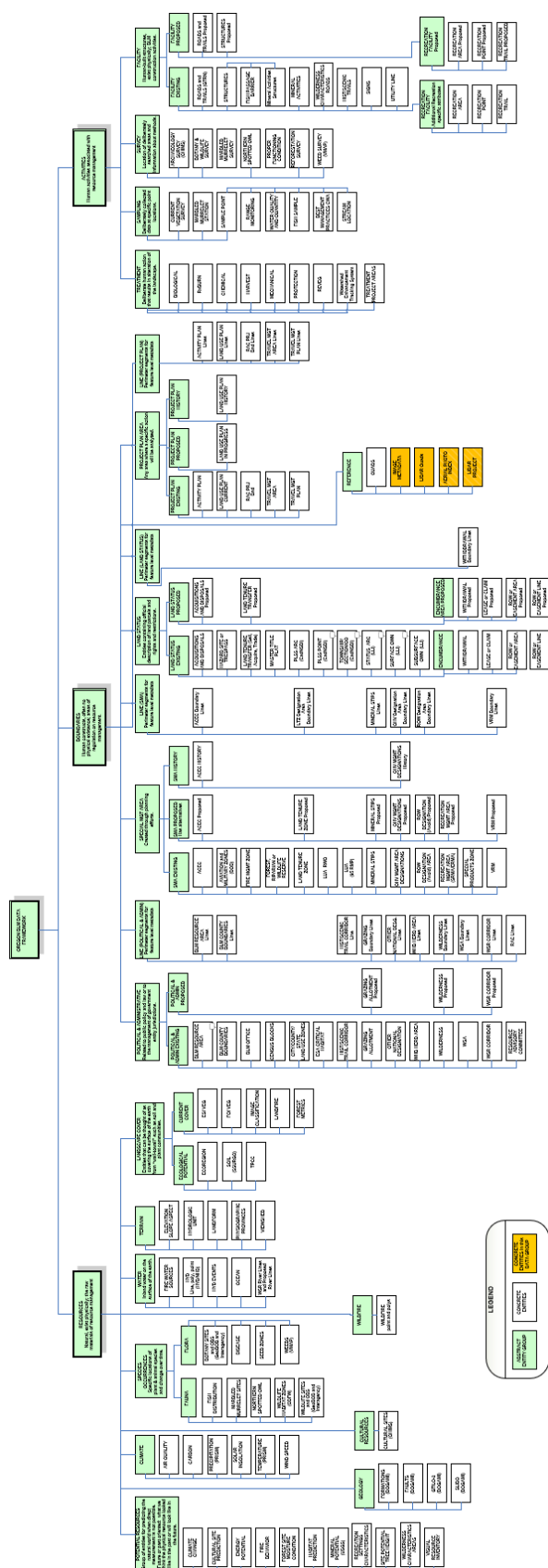


Figure 1 **Oregon Data Framework Overview**

Physical data is populated in the basic data sets. Those groups/categories above them do not contain actual data but set parameters that all data of that type must follow. See Figure 2, Data Organization Structure, for a simplified schematic of the entire ODF showing the overall organization and entity inheritance. The Remotely Sensed Data Indexes entities are highlighted. For additional information about the ODF, contact the [State Data Administrator](#). The State Data Administrator's contact information can be found at the following link:

<https://www.blm.gov/about/data/oregon-data-management>

ODF

Boundaries

Reference

AP_CENTER_POINT

AP_FLIGHT_LINE

AP_FOOTPRINT_POLY

AP_PROJECT_POLY

LIDAR_FOOTPRINT_POLY

LIDAR_PROJECT_POLY

SATELLITE_FOOTPRINT_POLY

SATELLITE_PROJECT_POLY

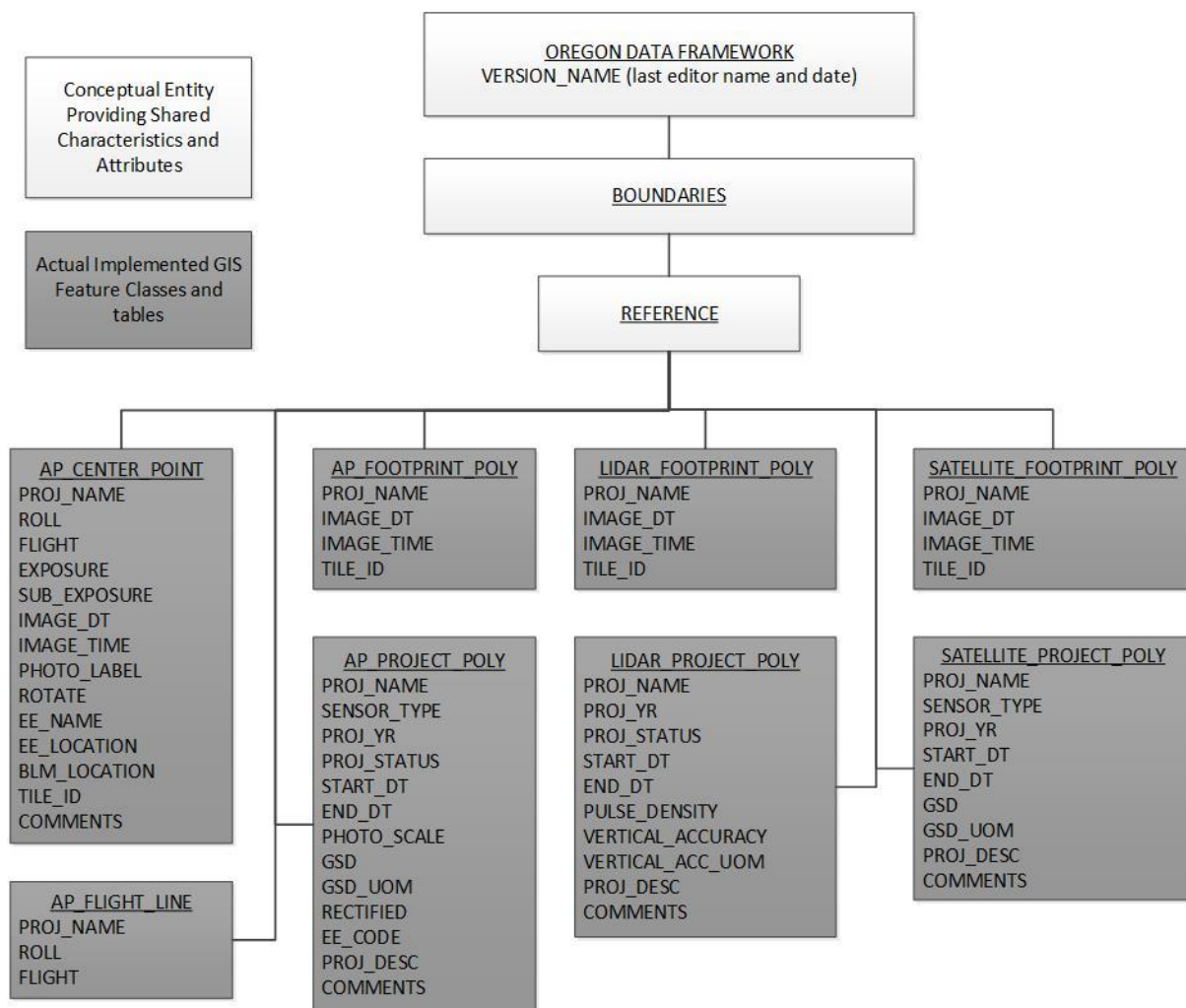


Figure 2 Data Organization Structure

2.5 Relationship to DOI Enterprise Architecture Data Resource Model

The Department of the Interior (DOI) Enterprise Architecture contains a component called the Data Resource Model. This model addresses the concepts of data sharing, data description, and data context. This data standard provides information needed to address each of those areas. Data sharing is addressed through complete documentation and simple data structures which make sharing easier. Data description is addressed through the section on Attribute Descriptions. Data context is addressed through the data organization and structure portions of this document. In addition, the DOI Data Resource Model categorizes data by use of standardized Data Subject Areas and Information Classes. For this data set, the Data Subject Area and Information Class are:

- Data Subject Area: Geospatial
- Information Class: Location

3 Data Management Protocols

3.1 Accuracy Requirements

A wide range of positional accuracy is acceptable within the Remotely Sensed Data Indexes theme. Aerial photography center points plotted by hand on small scale maps may contain significant error.

3.2 Collection, Input, and Maintenance Protocols

Most points are input from GPS coordinates, digitized from georeferenced maps, or matched to reference orthoimagery. Aerial photography flight lines represent the path of the aircraft during image capture. They are created by connecting photo center points. Footprint polygons are generally calculated based on those points and the nominal scale, which varies with elevation across the image. Project polygons represent the physical area covered by the imagery. They are created by buffering the flight lines and merging the results.

3.3 Update Frequency and Archival Protocols

Staff will create and update Remotely Sensed Data Indexes data as needed.

Data backup takes place under the general GIS backup and retention schedule. There is no permanent archive.

3.4 Statewide Monitoring

The State Data Steward is responsible for coordinating the response to national BLM and interagency data calls.

Each year, the Resource Science Group of the BLM Division of Resources, Lands, Minerals, and Fire meets with the state data stewards and technical leads for every corporate geospatial theme to conduct an annual review of the data. During the annual review, geospatial staff present the state data stewards and technical leads with a report detailing QAQC results performed on the data. The QAQC checks include:

- All attribute values conform to the range or coded-value domains to which they are applied.
- All attributes marked as required in the data standard have values.
- Duplicate features (or records) which have the same geometry and attributes.
- Invalid geometry (such as self-intersections or null geometry).
- Other checks, as necessary (can be customized according to the data standard).

In addition to this report, geospatial staff conduct a qualitative needs assessment with the data steward and technical leads to identify any unmet needs or problems with the status of the data. At the conclusion of the review, the team records the data steward's and technical leads approval of the datasets reviewed. Data administration staff note this approval in the official corporate metadata.

4 Remotely Sensed Data Indexes Schema (simplified)

General Information: Attributes are listed in the order they appear in the geodatabase feature class. The order is an indication of the importance of the attribute for theme definition and use. There are no aliases unless specifically noted. The domains used in this data standard can be found in Appendix A. These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard. Current domains are found on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following web site: <https://www.blm.gov/about/data/oregon-data-management>.

For domains not listed at that site contact: [State Data Administrator](#).

4.1 AP_CENTER_POINT Feature Class (Aerial Photography Points)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
ROLL	String	5	0	Yes	
FLIGHT	String	8		No	
EXPOSURE	Short Integer			Yes	
SUB_EXPOSURE	String	5		No	
IMAGE_DT	Date			Yes	
IMAGE_TIME	String	4		No	
PHOTO_LABEL	String	15		No	
ROTATE	Short Integer		0	Yes	
EE_NAME	String	30		No	
EE_LOCATION	String	100		No	
BLM_LOCATION	String	100		No	
TILE_ID	String	150		Yes	
COMMENTS	String	255		No	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

4.2 AP_FLIGHT_LINE Feature Class (Aerial Photography Flight Lines)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
ROLL	String	5	0	Yes	
FLIGHT	String	8	0	Yes	
STREAM_NAME	String	30		No	

VERSION_NAME	String	50	InitialLoad	Yes *	
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* Values automatically generated

4.3 AP_FOOTPRINT_POLY Feature Class (Aerial Photography Footprint Polygons)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
IMAGE_DT	Date			Yes	
IMAGE_TIME	String	4		No	
TILE_ID	String	150		Yes	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

4.4 AP_PROJECT_POLY Feature Class (Aerial Photography Project Polygons)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
SENSOR_TYPE	String	10		Yes	dom_RS_SENSOR_TYPE
PROJ_YR	String	4		No	
PROJ_STATUS	String	10		Yes	dom_RS_PROJECT_STATUS
START_DT	Date			No	
END_DT	Date			No	
PHOTO_SCALE	Long Integer			No	
GSD	Double			No	
GSD_UOM	String	2		No	dom_GSD_UOM
RECTIFIED	String	1	N	Yes	dom_YN
EE_CODE	String	10		No	
PROJ_DESC	String	255		Yes	
COMMENTS	String	255		No	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

4.5 LIDAR_FOOTPRINT_POLY Feature Class (LiDAR Footprint Polygons)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
IMAGE_DT	Date			Yes	
IMAGE_TIME	String	4		No	
TILE_ID	String	150		Yes	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

4.6 LIDAR_PROJECT_POLY Feature Class (LiDAR Project Polygons)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
PROJ_YR	String	4		No	
PROJ_STATUS	String	10		Yes	dom_RS_PROJECT_STATUS
START_DT	Date			No	
END_DT	Date			No	
PULSE_DENSITY	Double			No	
VERTICAL_ACCURACY	Double			No	
VERTICAL_ACC_UOM	String	2		No	dom_VERTICAL_ACC_UOM
PROJ_DESC	String	255		Yes	
COMMENTS	String	255		No	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

4.7 SATELLITE_FOOTPRINT_POLY Feature Class (Satellite Footprint Polygons)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
IMAGE_DT	Date			Yes	
IMAGE_TIME	String	4		No	

TILE_ID	String	150		Yes	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

4.8 SATELLITE_PROJECT_POLY Feature Class (Satellite Project Polygons)

For domain and default values, see Section o, [Attribute Characteristics and Definition](#) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
PROJ_NAME	String	100		Yes	
SENSOR_TYPE	String	10		Yes	dom_RS_SENSOR_TYPE
PROJ_YR	String	4		No	
PROJ_STATUS	String	10		Yes	dom_RS_PROJECT_STATUS
START_DT	Date			No	
END_DT	Date			No	
GSD	Double			No	
GSD_UOM	String	2		No	dom_GSD_UOM
PROJ_DESC	String	255		Yes	
COMMENTS	String	255		No	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

5 Projection and Spatial Extent

All feature classes and feature datasets are in Geographic, North American Datum 83. Units are decimal degrees. Spatial extent (area of coverage) includes all of Oregon and Washington. See the metadata for this data for a more precise description of the extent.

6 Spatial Entity Characteristics

- Aerial Photography Points (AP_CENTER_POINT)
 - Description: An instance of the Reference group
 - Geometry: Simple point features
 - Topology: No topology rules enforced
 - Integration Requirements: None
- Aerial Photography Flight Lines (AP_FLIGHT_LINE)
 - Description: An instance of the Reference group
 - Geometry: Simple line features
 - Topology: No topology rules enforced
 - Integration Requirements: None
- Aerial Photography Footprint Polygons (AP_FOOTPRINT_POLY)
 - Description: An instance of the Reference group
 - Geometry: Simple polygon features
 - Topology: No topology rules enforced
 - Integration Requirements: None
- Aerial Photography Project Polygons (AP_PROJECT_POLY)
 - Description: An instance of the Reference group
 - Geometry: Simple polygon features
 - Topology: No topology rules enforced
 - Integration Requirements: None
- LiDAR Footprint Polygons (LIDAR_FOOTPRINT_POLY)
 - Description: An instance of the Reference group
 - Geometry: Simple polygon features
 - Topology: No topology rules enforced
 - Integration Requirements: None
- LiDAR Project Polygons (LIDAR_PROJECT_POLY)
 - Description: An instance of the Reference group
 - Geometry: Simple polygon features
 - Topology: No topology rules enforced
 - Integration Requirements: None

- Satellite Footprint Polygons (SATELLITE_FOOTPRINT_POLY)
 - Description: An instance of the Reference group
 - Geometry: Simple polygon features
 - Topology: No topology rules enforced
 - Integration Requirements: None
- Satellite Project Polygons (SATELLITE_PROJECT_POLY)
 - Description: An instance of the Reference group
 - Geometry: Simple polygon features
 - Topology: No topology rules enforced
 - Integration Requirements: None

7 Attribute Characteristics and Definition (In alphabetical order)

7.1 BLM_LOCATION

Geodatabase Name	BLM_LOCATION
BLM Structured Name	BLM_Location_Text
Inheritance	Not Inherited
Alias Name	BLM Location
Feature Class Use/Entity Table	AP_CENTER_POINT
Definition	The URL for the location of the image on the BLM network. This field is not available in the dataset posted on the public web.
Required/Optional	Optional
Domain (Valid Values)	No Domain
Data Type	String (100)

7.2 COMMENTS

Geodatabase Name	COMMENTS
BLM Structured Name	Comments_Text
Inheritance	Not Inherited
Alias Name	Comments
Feature Class Use/Entity Table	AP_CENTER_POINT, AP_PROJECT_POLY, LIDAR_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	Additional information about the project.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Example: 3-inch imagery included
Data Type	String (255)

7.3 EE_CODE

Geodatabase Name	EE_CODE
BLM Structured Name	Earth_Explorer_Code_Text
Inheritance	Not Inherited
Alias Name	Earth Explorer Project
Feature Class Use/Entity Table	AP_PROJECT_POLY
Definition	The Earth Explorer code for the project.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: DESC0, CGC20, 62BA0
Data Type	String (10)

7.4 EE_LOCATION

Geodatabase Name	EE_LOCATION
BLM Structured Name	Earth_Explorer_Location_Text
Inheritance	Not Inherited
Alias Name	Earth Explorer Location
Feature Class Use/Entity Table	AP_CENTER_POINT
Definition	The URL for the Earth Explorer large thumbnail file location.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Example: https://earthexplorer.usgs.gov/browse-link/4660/AR4MED101005002
Data Type	String (100)

7.5 EE_NAME

Geodatabase Name	EE_NAME
BLM Structured Name	Earth_Explorer_Name_Text
Inheritance	Not Inherited
Alias Name	Earth Explorer ID
Feature Class Use/Entity Table	AP_CENTER_POINT
Definition	The Earth Explorer file name (Entity_ID).
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: AR462MO01001002, AR4MED101005004
Data Type	String (30)

7.6 END_DT

Geodatabase Name	END_DT
BLM Structured Name	End_Date
Inheritance	Not Inherited
Alias Name	End Date
Feature Class Use/Entity Table	AP_PROJECT_POLY, LIDAR_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	The latest date of capture for the project.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Example: 06/22/1995
Data Type	Date

7.7 EXPOSURE

Geodatabase Name	EXPOSURE
BLM Structured Name	Exposure_Number
Inheritance	Not Inherited
Alias Name	Exposure
Feature Class Use/Entity Table	AP_CENTER_POINT
Definition	The assigned photo exposure number unique to the flight line or project.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: 3, 5, 17
Data Type	Short Integer

7.8 FLIGHT

Geodatabase Name	FLIGHT
BLM Structured Name	Flight_Line_Text
Inheritance	Not Inherited
Alias Name	Flight Line
Feature Class Use/Entity Table	AP_CENTER_POINT, AP_FLIGHT_LINE
Definition	The assigned photo flight line number unique to the project. The basic format is an integer value (overall flight line) with an optional modifier (letter or decimal value indicating a discontinuous piece. The letter "R" indicates a re-flight of rejected flight line.
Required/Optional	Optional in AP_CENTER_POINT, Required in AP_FLIGHT_LINE
Domain (Valid Values)	No Domain. Examples: 2A, 7, 33.4
Data Type	String (8)

7.9 GSD

Geodatabase Name	GSD
BLM Structured Name	Ground_Sample_Distance_Number
Inheritance	Not Inherited
Alias Name	Ground Sample Distance
Feature Class Use/Entity Table	AP_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	The nominal size on the ground depicted by one pixel of an image.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: 0.5, 3, 18
Data Type	Double

7.10 GSD_UOM

Geodatabase Name	GSD_UOM
BLM Structured Name	Ground_Sample_Distance_Unit_of_Measure_Code
Inheritance	Not Inherited
Alias Name	Ground Sample Distance Unit of Measure
Feature Class Use/Entity Table	AP_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	The unit of measure used to measure the ground sample distance of imagery.
Required/Optional	Optional
Domain (Valid Values)	dom_GSD_UOM
Data Type	String (2)

7.11 IMAGE_DT

Geodatabase Name	IMAGE_DT
BLM Structured Name	Image_Date
Inheritance	Not Inherited
Alias Name	Image Date
Feature Class Use/Entity Table	AP_CENTER_POINT, AP_FOOTPRINT_POLY, LIDAR_FOOTPRINT_POLY, SATELLITE_FOOTPRINT_POLY
Definition	The date of capture for the image.
Required/Optional	Required
Domain (Valid Values)	No Domain. Example: 05/19/2014
Data Type	Date

7.12 IMAGE_TIME

Geodatabase Name	IMAGE_TIME
BLM Structured Name	Image_Time_Text
Inheritance	Not Inherited
Alias Name	Image Time
Feature Class Use/Entity Table	AP_CENTER_POINT, AP_FOOTPRINT_POLY, LIDAR_FOOTPRINT_POLY, SATELLITE_FOOTPRINT_POLY
Definition	The time of capture for the image in military 24-hour format. Values do not include a colon to separate hour from minutes.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: 0928, 1141, 1517
Data Type	String (4)

7.13 PHOTO_LABEL

Geodatabase Name	LABEL
BLM Structured Name	Photo_Label_Text
Inheritance	Not Inherited
Alias Name	Label
Feature Class Use/Entity Table	AP_CENTER_POINT
Definition	The photo name composed of roll, flight line (if applicable), and exposure number unique within each project.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: 4-33-17, 2X-3-22, 19-41.2-4, 1-2B-8
Data Type	String (15)

7.14 PHOTO_SCALE

Geodatabase Name	PHOTO_SCALE
BLM Structured Name	Photo_Scale_Number
Inheritance	Not Inherited
Alias Name	Photo Scale
Feature Class Use/Entity Table	AP_PROJECT_POLY
Definition	The nominal photo scale of the aerial photograph expressed by the ratio of the distance on the photo to the corresponding distance on the ground described by the denominator of the representative fraction (one ground unit equals the scale value units on the ground).
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 7000, 12000, 48000
Data Type	Long Integer

7.15 PROJ_DESC

Geodatabase Name	PROJ_DESC
BLM Structured Name	Project_Description_Text
Inheritance	Not Inherited
Alias Name	Description
Feature Class Use/Entity Table	AP_PROJECT_POLY, LIDAR_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	Project details and information about the location.
Required/Optional	Required
Domain (Valid Values)	No Domain. Example: Coos Bay District Cyclical Photography
Data Type	String (255)

7.16 PROJ_NAME

Geodatabase Name	PROJ_NAME
BLM Structured Name	Project_Name_Text
Inheritance	Inherited from Entity TREATMENTS
Alias Name	Project Name
Feature Class Use/Entity Table	All feature classes
Definition	The overall name for the remote sensing project.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: O-98-SAL, Panther Creek
Data Type	String (100)

7.17 PROJ_STATUS

Geodatabase Name	PROJ_STATUS
BLM Structured Name	Project_Status_Text
Inheritance	Not Inherited
Alias Name	Status
Feature Class Use/Entity Table	AP_PROJECT_POLY, LIDAR_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	The status of the remote sensing project.
Required/Optional	Required
Domain (Valid Values)	dom_RS_PROJECT_STATUS
Data Type	String (10)

7.18 PROJ_YR

Geodatabase Name	PROJ_YR
BLM Structured Name	Project_Year_Text
Inheritance	Not Inherited
Alias Name	Project Year
Feature Class Use/Entity Table	AP_PROJECT_POLY, LIDAR_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	The calendar year during which most of the project took place.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: 1939, 1978, 2016
Data Type	String (4)

7.19 PULSE_DENSITY

Geodatabase Name	PULSE_DENSITY
BLM Structured Name	Pulse_Density_Number
Inheritance	Not Inherited
Alias Name	Pulse Density
Feature Class Use/Entity Table	LIDAR_PROJECT_POLY
Definition	The average number of LiDAR first returns per square meter.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: 8, 9.7, 12.6
Data Type	Double

7.20 RECTIFIED

Geodatabase Name	RECTIFIED
BLM Structured Name	Rectified_Text
Inheritance	Not Inherited
Alias Name	Rectified
Feature Class Use/Entity Table	AP_PROJECT_POLY
Definition	Indicates whether the imagery is rectified. The default value for this field is N (No).
Required/Optional	Required
Domain (Valid Values)	dom_YN
Data Type	String (1)

7.21 ROLL

Geodatabase Name	ROLL
BLM Structured Name	Film_Roll_Name
Inheritance	Not Inherited
Alias Name	Film Roll
Feature Class Use/Entity Table	AP_CENTER_POINT, AP_FLIGHT_LINE
Definition	The film roll number for the project. The default value for this field is 0.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: 2,19, 1X
Data Type	String (5)

7.22 ROTATE

Geodatabase Name	ROTATE
BLM Structured Name	Rotate_Degrees_Number
Inheritance	Not Inherited
Alias Name	Rotate
Feature Class Use/Entity Table	AP_CENTER_POINT
Definition	The value in degrees to rotate the photo image so that north is at the top. The default value for this field is 0.
Required/Optional	Required
Domain (Valid Values)	No Domain. Examples: 0, 90, 27
Data Type	Short Integer

7.23 SENSOR_TYPE

Geodatabase Name	SENSOR_TYPE
BLM Structured Name	Sensor_Type_Code
Inheritance	Not Inherited
Alias Name	Sensor Type
Feature Class Use/Entity Table	AP_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	The data sensor type of the project.
Required/Optional	Required
Domain (Valid Values)	dom_RS_SENSOR_TYPE
Data Type	String (10)

7.24 START_DT

Geodatabase Name	START_DT
BLM Structured Name	Start_Date
Inheritance	Not Inherited
Alias Name	Start Date
Feature Class Use/Entity Table	AP_PROJECT_POLY, LIDAR_PROJECT_POLY, SATELLITE_PROJECT_POLY
Definition	The earliest date of capture for the project.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Example: 10/23/2008
Data Type	Date

7.25 STREAM_NAME

Geodatabase Name	STREAM_NAME
BLM Structured Name	Stream_Name_Text
Inheritance	Not Inherited
Alias Name	Stream Name
Feature Class Use/Entity Table	AP_FLIGHT_LINE
Definition	The stream name associated with the flight line.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: Cow Creek, Swift Creek
Data Type	String (30)

7.26 SUB_EXPOSURE

Geodatabase Name	SUB_EXPOSURE
BLM Structured Name	Sub_Exposure_Name
Inheritance	Not Inherited
Alias Name	Sub-Exposure
Feature Class Use/Entity Table	AP_CENTER_POINT
Definition	Unique value identifier for separating exposure numbers for images occurring outside the established project boundary. Images occur before or after the first and last exposure numbers of the planned line.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: A, UA21, UB9
Data Type	String (5)

7.27 TILE_ID

Geodatabase Name	TILE_ID
BLM Structured Name	Tile_Identifier_Text
Inheritance	Not Inherited
Alias Name	Tile ID
Feature Class Use/Entity Table	AP_CENTER_POINT, AP_FOOTPRINT_POLY, LIDAR_FOOTPRINT_POLY, SATELLITE_FOOTPRINT_POLY
Definition	Unique aerial photograph, LiDAR file, or satellite image identifier. For aerial photographs, this is a unique identifier that is a concatenation of: PROJ_NAME>Roll-FLIGHT-EXPOSURE-SUB_EXPOSURE. Default value of 0 (zero) is used if unknown.
Required/Optional	Required
Domain (Valid Values)	No Domain. Example: O-03-SBLO>1-8.0-5, 8163>1-1-4

Data Type	String (150)
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7.28 VERSION_NAME

Geodatabase Name	VERSION_NAME
BLM Structured Name	Geodatabase_Version_Text
Inheritance	Version Name
Alias Name	Inherited from Entity ODF
Feature Class Use/Entity Table	All feature classes
Definition	<p>Name of the corporate geodatabase version previously used to edit the record.</p> <p>InitialLoad = feature has not been edited in ArcSDE.</p> <p>Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation.</p> <p>Example: sfrazier.FIRE_POLY-121210-111034</p> <p>Only appears in the transactional (edit) version. Public version (which is also the version used internally for mapping or analysis) does not contain this attribute.</p>
Required/Optional	Required (automatically generated)
Domain (Valid Values)	No domain
Data Type	String (50)

7.29 VERTICAL_ACCURACY

Geodatabase Name	VERTICAL_ACCURACY
BLM Structured Name	Vertical_Accuracy_Measure
Inheritance	Not Inherited
Alias Name	Vertical Accuracy
Feature Class Use/Entity Table	LIDAR_PROJECT_POLY
Definition	The vertical accuracy Root Mean Square Error (RMSE) of LiDAR.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 0.28, 0.013
Data Type	Double

7.30 VERTICAL_ACC_UOM

Geodatabase Name	VERTICAL_ACC_UOM
BLM Structured Name	Vertical_Accuracy_Unit_of_Measure_Code
Inheritance	Not Inherited

Alias Name	Vertical Accuracy
Feature Class Use/Entity Table	LIDAR_PROJECT_POLY
Definition	The unit of measure used to measure the vertical accuracy of LiDAR data.
Required/Optional	Optional
Domain (Valid Values)	dom_VERTICAL_ACC_UOM
Data Type	String (2)

8 Layer Files (Publication Views)

8.1 General

Master corporate feature classes/datasets maintained in the edit database (currently ORSOEDIT) are “published” to the user database (currently ORSOVCTR) in several ways:

- Copied completely with no changes (replicated).
- Copied with no changes except to omit one or more feature classes from a feature dataset.
- Minor changes made (e.g., clip, dissolve, union with ownership) to make the data easier to use. Feature classes that have been changed are indicated by “PUB” in their name. They are created through scripts that can be automatically executed and are easily rebuilt from the master (ORSOEDIT) data whenever necessary.

Layer files are not new data requiring storage and maintenance but point to existing data. They have appropriate selection and symbolization for correct use and display of the data. They provide the guidance for data published on the web. Layer files are created by simple, documented processes, and can be deleted and recreated at any time.

8.2 Specific to This Dataset

All eight Remotely Sensed Data Index feature classes are replicated to the corporate replication area and to the web. Project status is represented in a dashboard presentation. The BLM_LOCATION and VERSION_NAME fields should be removed from the dataset posted to the public web.

9 Editing Procedures

9.1 Managing Overlap (General Guidance)

“Overlap” means there are potentially more than one feature in the same feature class that occupies the same space (“stacked” polygons). Depending on the query, acres will be double counted.

In this discussion, an area entity may consist of more than one polygon, and a line entity may consist of more than one arc. They would have multiple records in the spatial table (with identical attributes). Multi-part features are not allowed. Multi-part features are easily created inadvertently and are not always easy to identify. If they are not consciously and consistently avoided, feature classes will end up with a mixture of single and multi-part features. Multi-part features can be more difficult to edit, query, and select, along with impacting overall performance.

Overlap is only allowed in the ODF in limited and controlled scenarios. In each case, the “cause” of the overlap (the attribute changes that “kick off” a new feature which may overlap an existing feature) is carefully defined and controlled. In other words, in feature classes that permit overlap for a change in spatial extent, there is always a new feature created which may overlap an existing feature, but in addition there are certain attribute(s) that will result in a new feature even if there is no spatial change. The feature classes (and the one feature dataset) that allow overlap, and the attributes that lead to a new, possibly overlapping feature, are described below.

9.1.1 Overlapping Polygons where polygons are a stand-alone feature class.

- No topology rules.
- A new Remotely Sensed Data Indexes Project Polygon is created for each individual sensor acquisition taken at a time within an overall project acquisition. Polygons may overlap in whole or in part based on the sensor location at the time of acquisition.
- A new Remotely Sensed Data Indexes Footprint Polygon is created for each individual acquisition unit based on a combination of unique sensor, location, and/or time. Polygons may overlap in whole or in part based on the sensor type and/or time.

9.1.2 Overlapping Arcs where arcs are a stand-alone feature class.

- No topology rules.
- New AP_FLIGHT_LINE arcs occur for each unique acquisition path within a project. Overlapping arcs may be present where the path repeats over time.

9.1.3 Overlapping Points.

Generally, these are allowed and do not cause a problem since points have no spatial extent. However, it is easy to inadvertently create more than one point making it important to search for and delete duplicates.

9.2 Editing Quality Control

Duplicate features: Checking for undesired duplicates is critical. Polygons or arcs that are 100% duplicate are easily found by searching for identical attributes along with identical Shape_Area and/or Shape_Length. Searching for partially overlapping arcs or polygons is harder, and each case must be inspected to determine if the overlap is desired or not.

Buffer and dissolve considerations: Where polygons are created with the buffer tool, the correct option must be selected. The default option is “None,” which means overlap will be retained. Sometimes the overlap should be dissolved, and the option changed to “All.” If the dissolve tool is used on polygons or arcs, the “Create multipart features” should be unchecked.

Null geometry: Check any features that have 0 or very small Shape_Area or Shape_Length. If a feature has 0 geometry and you cannot zoom to it, it is probably an inadvertently created “Null” feature and should be deleted. Very small features may also be unintended, resulting from messy line work.

Check tolerances: In general, set Cluster Tolerance as small as possible. This is 0.000000009 Degree (0.000007

degree is approximately 1 meter).

Snapping considerations: Flight lines snapped to image center points should have one vertex created for each corresponding point location.

Check that all date fields contain valid dates in MM/DD/YYYY format. If an attribute has a domain, check for invalid values. The values must be exact.

Check for capitalization and spacing differences in attribute values that should be the same. Check for leading or trailing blanks what will make a different value even if it looks identical.

9.3 Theme Specific Guidance

There is much in the data standard that addresses editing and provides guidance especially in the Data Management Protocols (Section 3).

High resolution imagery should be used for spotting photo centers.

10 Abbreviations and Acronyms

Does not include abbreviations/acronyms used as codes for data attributes or domain values.

Table 2 Abbreviations/Acronyms Used

Abbreviations	Descriptions
ARC	GIS line feature
BLM	Bureau of Land Management, U.S. Department of the Interior
CADNSDI	Cadastral National Spatial Data Infrastructure
DEM	Digital Elevation Model
DLG	Digital Line Graphs
DOGAMI	Oregon Department of Geology and Mineral Industries
FOIA	Freedom of Information Act
FOIVEG	Forest Operations Inventory
GIS	Geographic Information System
GPS	Global Positioning System
GSD	Ground Sample Distance
GTRN	Ground Transportation GIS dataset
IDP	Interdisciplinary
LiDAR	Light Detection and Ranging
NAD	North American Datum
NARA	National Archives and Records Administration
NEPA	National Environmental Policy Act
ODF	Oregon Data Framework
OR/WA	Oregon/Washington BLM Administrative State
POLY	GIS polygon feature
PUB	Publication
RADAR	Radio Detection and Ranging
RMP	Resource Management Plan
RMSE	Root Mean Square Error
SDE	Spatial Database Engine
USFS	United States Forest Service, U.S. Department of Agriculture
USGS	United States Geological Survey, U.S. Department of the Interior
WEB	Worldwide Web (internet)
WODDB	Western Oregon Digital Database

A Domains (Valid Values)

These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard. Current domains are found on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following web site:

<http://www.blm.gov/or/datamanagement/index.php>

For domains not listed at that site contact: contact the [State Data Administrator](#).

A.1 dom_GSD_UOM

Ground Sample Distance Unit of Measure Code. Indicates the unit of measure used for the ground sample distance of imagery (the nominal size on the ground depicted by one pixel of an image).

Code	Description
CM	CM - Centimeters
IN	IN - Inches
KM	KM - Kilometers
M	M - Meters
MM	MM - Millimeters

A.2 dom_RS_SENSOR_TYPE

Remote Sensing Sensor Type Code. Indicates the type of film or sensor bands of the original imagery.

Code	Description
Bathy	Bathy - Bathymetric LiDAR
FBW	FBW - Black and White Film scanned to RGB image
FCI	FCI - Color Infrared Film scanned to RGB image
FNC	FNC - Natural Color Film scanned to RGB image
Hyper	Hyper - Hyperspectral Sensor; many bands
Multi	Multi - Multi-spectral Sensor; four to ten discrete bands other than standard RGBI
Pan	Pan - Panchromatic or single band
RGB	RGB - Three Band Sensor; red, green, blue
RGBI	RGBI - Four Band Sensor; red, green, blue, near-infrared
Therm	Therm - Thermal Infrared; short-wave infrared

A.3 dom_RS_PROJECT_STATUS

Remote Sensing Project Status Code. Indicates the current state of the remote sensing project.

Code	Description
Acquiring	Acquiring - Collection in process
Available	Available - Accessible through the OR/WA network
Completed	Completed - Non-BLM project with final data but not on the OR/WA network

Code	Description
Planned	Planned - Project approved but not acquired
Processing	Processing - Data acquired and currently in the processing stage
Proposed	Proposed - Project idea – may need refining or funding

A.4 dom_VERTICAL_ACC_UOM

Vertical Accuracy Unit of Measure Code. Indicates the unit of measure used for the vertical accuracy measurement.

Code	Description
FT	FT – Feet
M	M – Meters

A.5 dom_YN

Yes/No Flag. Standard OR/WA BLM Yes/No flag domain.

Code	Description
Y	Yes
N	No
U	Unknown