Guide: PGC Commercial Satellite Imagery Documentation
URL: https://www.pgc.umn.edu/guides/%kbe_taxonomy%/pgc-commercial-satellite-imagery-documentation/
Last Modified: October 25, 2024
Export Date: May 9, 2025

Information for users that receive commercial satellite imagery deliverables from PGC.

Imagery File Structure

Raw imagery (NITF format):

File type	Example
NITF Image	WV02_20130426224306_1030010020A45200_13APR26224306-M1BS-500069507110_01_P004.ntf
TAR archive of ephemeris and aux files	WV02_20130426224306_1030010020A45200_13APR26224306-M1BS-500069507110_01_P004.tar
JPEG preview image	WV02_20130426224306_1030010020A45200_13APR26224306-M1BS-500069507110_01_P004-BROWSE
XML metadata file	WV02_20130426224306_1030010020A45200_13APR26224306-M1BS-500069507110_01_P004.xml

PGC Processed Imagery:

File type	Example
GeoTiff Image	WV02_20120607224719_10300100193E9E00_12JUN07224719-M1BS-052560775010_04_P004_u16ns3338.tif
Projection info	WV02_20120607224719_10300100193E9E00_12JUN07224719-M1BS-052560775010_04_P004_u16ns3338.prj
XML metadata file (includes original image metadata and PGC processing parameter information)	WV02_20120607224719_10300100193E9E00_12JUN07224719-M1BS-052560775010_04_P004_u16ns3338.xml

Notes: GeoTiff image is compressed using a lossless LZW method that does not alter the images.

PGC Processing Notation

Radiometric Correction:

ns – no stretch

rf – top of atmosphere percent reflectance (scaled to bit depth; 8-bit: 0-200, 16-bit: 0-2000)

mr – modified reflectance (for ice/snow free areas)

Data Type:

u08 – unsigned 8-bit integer

u16 – unsigned 16-bit integer

Projection information:

EPSG Code	Name	Area of use	Datum
3031	Antarctic Polar Stereographic	Antarctica	WGS84
3413	NSIDC Sea Ice Polar Stereographic North	Greenland	WGS84
3338	Alaska Albers Equal Area Conic	Alaska	NAD83
Varies	UTM Zones 3-21 N	Alaska and Canada	NAD83
Varies	UTM zones 1-59 N/S	Worldwide	WGS84

Commercial Satellite Imagery Naming Conventions

Maxar

QB02 – Quickbird 2

WV01 – Worldview-1

WV02 – Worldview-2

WV03 – Worldview-3

GE01 – Geoeye-1

Example 1: Worldview-2

Example: WV02_20140620230824_1030010032BE0200_14JUN20230824-M1BS_R07C1-500106095060_01_P001.ntf	
WV02	sensor
20140620230824	acquisition time stamp (yyyymmddhhmmss)
1030010032BE0200	Catalog ID

14JUN20230824-M1BS_R07C1-500106095060_01_P001	Original Name	
	14JUN20230824	Original timestamp
	M	Image type (P: panchromatic, M: multispectral
	1BS	DG product type (1b: standard, 2A: georectified)
.ntf	file format (options = ntf, tif)	

Example 2: Geoeye-1 Ikonos

Example: IK01_20080705225000_2008070522505760000011624215_po_296415_pan_0000000.ntf		
IK01	sensor	
20080705225000	acquisition time stamp (yyyymmddhhmmss)	
2008070522505760000011624215	Catalog ID	
po_296415_pan_0000000	Original Name	
	pan	Band identifier (blu:blue, grn: green, red:red, nir:near infrared, pan:panchromatic)
.ntf	file format (options = ntf, tif)	

Example 3: Geoeye-1

Example: GE01_20101025231312_1000100_5V101025M0010001004B222003200482M_000949123.ntf		
GE01	sensor	
20101025231312	acquisition date (yyyymmddhhmmss)	
1000100	Catalog ID	
5V101025M0010001004B222003200482M_000949123	Original Name	
	101025	Original Timestamp
	M	Image type (P: panchromatic, M: multispectral)
	001000100	GE catalog number
	4B222	Product Type
	00320048	Sub-image identifier
	2	Processing version
	M	Stereo/mono flag
	000949123	OPS product number
.ntf	file format (options = ntf, tif)	

Sensor Information

Sensor	Min Resolution	Bands	
Quickbird-2 Multi	**2.4m**	Band 1 – Blue Band 2 – Green Band 3 – Red Band 4 – Near Infrared	
Quickbird-2 Pan	**0.6m**	Band 1 – Panchromatic	
Worldview-1 Pan	**0.5m**	Band 1 – Panchromatic	
Worldview-2 Multi	**1.85 m**	4 band image: Band 1 – Blue Band 2 – Green Band 3 – Red Band 4 – Near Infrared	8 band image: Band 1 – Coastal Band 2 – Blue Band 3 – Green Band 4 – Yellow Band 5 – Red Band 6 – Red Edge Band 7 – Near Infrared Band 8 – Near Infrared 2
Worldview-2 Pan	**0.46m**	Band 1 – Panchromatic	
Worldview-3 Multi	**1.65 m**	4 band image: Band 1 – Blue Band 2 – Green Band 3 – Red Band 4 – Near Infrared	8 band image: Band 1 – Coastal Band 2 – Blue Band 3 – Green Band 4 – Yellow Band 5 – Red Band 6 – Red Edge Band 7 – Near Infrared Band 8 – Near Infrared 2
Worldview-3 Pan	**0.31m**	Band 1 – Panchromatic	
Geoeye-1 Multi	**2m**	Band 1- Blue Band 2 – Green Band 3 – Red Band 4 – Near Infrared	
Geoeye-1 Pan	**0.5m**	Band 1- Panchromatic	
Ikonos Multi	**4m**	Band 1- Blue Band 2 – Green Band 3 – Red Band 4 – Near Infrared	
Ikonos Pan	**1m**	Band 1 – Panchromatic	

Documentation Links

Maxar general documentation:

https://www.maxar.com/resources#resource-table

Maxar XML metadata file documentation:

https://dg-cms-uploads-production.s3.amazonaws.com/uploads/document/file/106/ISD_External.pdf

Maxar radiometric correction:

https://dg-cms-uploads-production.s3.amazonaws.com/uploads/document/file/104/Radiometric_Use_of_WorldView-2_Imagery.pdf

NITF general documentation:

https://nsgreg.nga.mil/doc/view?i=2063https://gwg.nga.mil/ntb/baseline/docs/2500c/index.html

Contact:

Claire Porter

Polar Geospatial Center

University of Minnesota

porte254@umn.edu

Summary

In this Guide, we've covered:

- Imagery file structure
- PGC processing notation
- Commercial satellite imagery naming conventions
- Sensor information
- Imagery documentation links