Sentinel-2 Views

Tags sentinel, imagery, multispectral, temporal, amazon, MS, esa, sentinel on aws, sentinel2, sentinel2 on aws, sentinel2 views, sentinel-2, beta

Summary

Sentinel-2, 10m Multispectral, Multitemporal, 13-band images with visual renderings and indices. This Imagery Layer is sourced from the Sentinel-2 on AWS collections and is updated daily with new imagery. This layer is in beta release.

Description

Sentinel-2, 10, 20, and 60m Multispectral, Multitemporal, 13-band imagery is rendered on-the-fly and available for visualization and analytics. This imagery layer pulls directly from the Sentinel-2 on AWS collection and is updated daily with new imagery.

This imagery layer can be applied across a number of industries, scientific disciplines, and management practices. Some applications include, but are not limited to, land cover and environmental monitoring, climate change, deforestation, disaster and emergency management, national security, plant health and precision agriculture, forest monitoring, watershed analysis and runoff predictions, land-use planning, tracking urban expansion, highlighting burned areas and estimating fire severity.

Geographic Coverage

- Global
- Continental land masses from 65.4° South to 72.1° North, with these special guidelines:
  - All coastal waters up to 20 km from the shore
  - All islands greater than 100 km2
  - All EU islands
  - All closed seas (e.g. Caspian Sea)
  - The Mediterranean Sea
  - Note: Areas of interest going beyond the Mission baseline (as laid out in the Mission Requirements Document) will be assessed, and may be added to the baseline if sufficient resources are identified.

Temporal Coverage

- The revisit time for each point on Earth is every 5 days.
- This layer is updated daily with new imagery.
- This imagery layer is designed to include imagery collected within the past 14 months. Custom Image Services can be created for access to images older than 14 months.
- The number of images available will vary depending on location.

Image Selection/Filtering

- The most recent and cloud free images are displayed by default.
- Any image available, within the past 14 months, can be displayed via custom filtering.
- Filtering can be done based on attributes such as Acquisition Date, Estimated Cloud Cover, and Tile ID.
- Tile_ID is computed as [year][month][day]T[hours][minutes][seconds]_[UTMcode][latitudeband][square]_[sequence]. More...
  - NOTE: Not using filters, and loading the entire archive, may affect performance.

Analysis Ready

- This imagery layer is analysis ready with TOA correction applied.

Visual Rendering

- Default rendering is Natural Color (bands 4,3,2) with Dynamic Range Adjustment (DRA).
- The DRA version of each layer enables visualization of the full dynamic range of the images.
- Rendering (or display) of band combinations and calculated indices is done on-the-fly from the source images via Raster Functions.
- Various pre-defined Raster Functions can be selected or custom functions created.
- Available renderings include: Agriculture with DRA, Bathymetric with DRA, Color-Infrared with DRA, Natural Color with DRA, Short-wave Infrared with DRA, Geology with DRA, NDMI Colorized, Normalized Difference Built-Up Index (NDBI), NDWI Raw, NDWI - with VRE Raw, NDVI – with VRE Raw (NDRE), NDVI - VRE only Raw, NDVI Raw, Normalized Burn Ratio, NDVI Colormap.

Multispectral Bands

Band	Description	Wavelength (μm)	Resolution (m)
1	Coastal aerosol	0.433 - 0.453	60
2	Blue	0.458 - 0.523	10
3	Green	0.543 - 0.578	10
4	Red	0.650 - 0.680	10
5	Vegetation Red Edge	0.698 - 0.713	20
6	Vegetation Red Edge	0.733 - 0.748	20
7	Vegetation Red Edge	0.773 - 0.793	20
8	NIR	0.785 - 0.900	10
8A	Narrow NIR	0.855 - 0.875	20
9	Water vapour	0.935 - 0.955	60
10	SWIR – Cirrus	1.365 - 1.385	60
11	SWIR-1	1.565 - 1.655	20
12	SWIR-2	2.100 - 2.280	20

Additional Notes

- Overviews exist with a spatial resolution of 150m and are updated every quarter based on the best and latest imagery available at that time.
- To work with source images at all scales, the 'Lock Raster' functionality is available.
  - NOTE: 'Lock Raster' should only be used on the layer for short periods of time, as the imagery and associated record Object IDs may change daily.
- This ArcGIS Server dynamic imagery layer can be used in Web Maps and ArcGIS Desktop as well as Web and Mobile applications using the REST based Image services API.
- Images can be exported up to a maximum of 4,000 columns x 4,000 rows per request.

Data Source

Sentinel-2 imagery is the result of close collaboration between the (European Space Agency) ESA, the European Commission and USGS. Data is hosted by the Amazon Web Services as part of their Registry of Open Data. Users can access the imagery from Sentinel-2 on AWS , or alternatively access Sentinel2Look Viewer, EarthExplorer or the Copernicus Open Access Hub to download the scenes.

For information on Sentinel-2 imagery, see Sentinel-2.

Credits

Esri, European Commission, European Space Agency, Amazon Web Services

Use limitations

The Sentinel-2 data available through this service is licensed under the Copernicus Open Access Hub Terms and Conditions. Esri services are licensed under the Esri Master License Agreement.

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Important Note: This item is in beta and is not intended for use in production applications.

Important Note: This item requires an ArcGIS Online organizational subscription or an ArcGIS Developer account and does not consume credits. To access this item, you'll need to do one of the following:

- Sign in with an account that is a member of an organizational subscription
- Sign in with a developer account
- Register an application and use your application's credentials.

If you don't have an account, you can sign up for a free trial of ArcGIS or a free ArcGIS Developer account.

Extent

There is no extent for this item.

Scale Range

There is no scale range for this item.

You are currently using the Item Description metadata style. Change your metadata style in the Options dialog box to see additional metadata content.