



SuperSTAC

One STAC Catalog to rule them all

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[AWS Open Data](#)

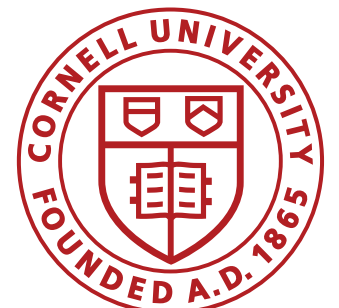
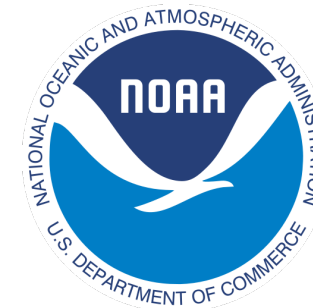
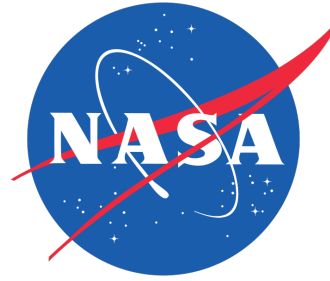
Proposal

There is a need for a globally searchable catalog of all geospatial and environmental data that is open to the public.

Catalog

Criteria:

- Globally searchable
- All Open Data
- All Cloud Providers
- Hosted
- On Prem
- **API Access**



What is STAC?

SpatioTemporal Asset Catalog

- **Item**
 - Ex. Sentinel-2 scene
- **Collection**
 - Ex. Collection of Sentinel-2 scenes
- **Catalog**
 - 1 or more sub-catalogs and/or collections

<https://stacspec.org/en>



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Sentinel-2 Collection 1 Level-2A

COG Sentinel-2 Collection 1 Level-2A, data from the Multispectral Instrument (MSI) onboard Sentinel-2

6/27/2015, 10:25:31 AM UTC until present

Sentinel-2 Level-1C

JPEG 2000 Global Sentinel-2 data from the Multispectral Instrument (MSI) onboard Sentinel-2

6/27/2015, 10:25:31 AM UTC until present

Sentinel-2 Level-2A

COG **JPEG 2000** Global Sentinel-2 data from the Multispectral Instrument (MSI) onboard Sentinel-2

6/27/2015, 10:25:31 AM UTC until present

Thumbnail image from:

https://radianteearth.github.io/stac-browser/#/external/earth-search.aws.element84.com/v1/collections/sentinel-2-l2a/items/S2B_12RXR_20240510_0_L2A

SpatioTemporal Asset Catalog



- Metadata describes the data for STAC Items
- House metadata in an API endpoint (STAC catalog)
- Supports Area of Interest query

```
- {
  rel: "child",
  type: "application/geo+json",
  href: "https://earth-search.aws.element84.com/v1/collections/sentinel-2-pre-c1-l2a"
},
- {
  rel: "child",
  type: "application/geo+json",
  href: "https://earth-search.aws.element84.com/v1/collections/cop-dem-glo-30"
},
- {
  rel: "child",
  type: "application/geo+json",
  href: "https://earth-search.aws.element84.com/v1/collections/naip"
},
```

Where

Who can host the STAC endpoint?

- **Neutral 3rd party**



STAC Summit at ESIP

In the room

- **Data Providers:** government agencies, partners, collaborators
- Level set – what is STAC, why should we care, Lightning Talks

Questions:

- Would you contribute STAC metadata to a federated STAC?
- Would you do a Proof of Concept STAC collection for a dataset?



STAC Summit at ESIP (continued)

- Many data providers are already creating STAC metadata or on roadmap
- Good interest in moving forward with **SuperSTAC**
- Some concerns to sort out
 - Ex. Federate at Catalog/Collection level or also item level?
- Neutral 3rd party to host and secure funding

STAC Summit **UPDATE**

- **Prototyping**
 - North Carolina Institute for Climate Studies (NCICS) prototype SuperSTAC with RadiantEarth
 - DevelopmentSeed continuing to work on <https://github.com/developmentseed/stactools-pipelines>
 - Element84 looking to scale STAC using geoparquet
- Need a **Community Leader** to drive

If you are interested in any of the above, reach out!

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Thank you!

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