STAC

Enabling online search and discovery of geospatial assets
SITUATION: THERE ARE 14 COMPETING STANDARDS.

14?! RIDICULOUS! WE NEED TO DEVELOP ONE UNIVERSAL STANDARD THAT COVERS EVERYONE'S USE CASES. YEAH!

SOON:

SITUATION: THERE ARE 15 COMPETING STANDARDS.
[...] Many providers of data and software in the earth observation field have been building **API's** to **expose** their data holdings to **modern developers**. Lacking a clear standard for massive amounts of imagery using modern tech (**JSON-based, RESTful**), everyone was building their **own slightly different** systems [...]
Many providers of data and software in the earth observation field have been building API's to expose their data holdings to modern developers. Lacking a clear standard for massive amounts of imagery using modern tech (JSON-based, RESTful), everyone was building their own slightly different systems [...]

Chris Holmes, 2017-03-11

Focus on « pragmatic » interoperability

Major functionalities are built as standalone Web Services so they can be used in/by other projects (e.g. iTag, QueryAnalyzer)

Keep simple REST Web Service

Use JSON for Web Services (e.g. search service provides ATOM output only for standard conformity ... but GeoJSON output is the default).

Next step would be to move to GeoJSON-LD (i.e. linked data) and ... to standardize JSON output in OpenSearch (?)
Why does STAC Matter?

Data Providers
STAC is a standardized way to expose collections of spatial temporal data. If you are a provider of data about the earth in need of a cataloging your holdings, STAC is driving a uniform means for indexing assets.

Developers
If you are building infrastructure to host, ingest, or manage collections of spatial data, STAC’s core JSON is the bare minimum needed to describe geospatial assets, and is extensible to customize to your domain.

Data Users
Users of spatial temporal data are often burdened with building unique pipelines for each different collection of data they consume. The STAC community has defined this specification to remove this complexity and spur common tooling.
STAC Catalogs generally fall into two different types: **Static** Catalogs and **Dynamic** Catalog APIs.
STAC Catalogs generally fall into two different types: Static Catalogs and Dynamic Catalog APIs.
JSON files of links that follow an **existing directory structure** of products to access (e.g. Landsat8/row/path/date/product.json)

STAC Catalogs generally fall into two different types: **Static Catalogs** and **Dynamic Catalog APIs**.

STAC API provides a RESTful endpoint that enables search of STAC Items, specified in **OpenAPI**, following **OGC’s WFS 3**.
SpatioTemporal Assets Catalog
A STAC Item is a GeoJSON Feature with additional datetime and assets.
A STAC Item is a GeoJSON Feature with additional datetime and assets.

SpatioTemporal Assets Catalog

Any file that represents information about the earth captured in a certain space and time.
A STAC Item is a GeoJSON Feature with additional datetime and assets.

A simple, flexible JSON file of links that provides a structure for to organize and browse STAC Items.

Any file that represents information about the earth captured in a certain space and time.

SpatioTemporal Assets Catalog
This presentation is a STAC Item i.e. a GeoJSON file with datetime and assets
A collection is a catalog

STAC Collection is an extension of the STAC Catalog with additional information such as the extents, license, keywords, providers, etc. that describe STAC items that fall within the Collection.
A collection is a catalog

STAC Collection is an extension of the STAC Catalog with additional information such as the extents, license, keywords, providers, etc that describe STAC Items that fall within the Collection.
A collection is a catalog

STAC Collection is an extension of the STAC Catalog with additional information such as the extents, license, keywords, providers, etc that describe STAC Items that fall within the Collection.

Flood in the South of France - 2019-11
A **collection** is a **catalog**

STAC Collection is an extension of the STAC Catalog with additional information such as the **extents**, **license**, **keywords**, **providers**, etc that describe STAC Items that fall within the Collection.

An item belongs to one and only one **collection** but can belong to several **catalogs**.

It contains items from various **collections**.

**Flood in the South of France - 2019-11**
"id": "catalogs",
"title": "STAC demo catalog",
"description": "STAC v0.9.0 implementation by [SnapPlanet](https://snapplanet.io)",
"links": [
    {
        "rel": "self",
        "type": "application/json",
        "title": "STAC demo catalog",
        "href": "https://tamn.snapplanet.io"
    },
    {
        "rel": "parent",
        "type": "application/json",
        "title": "Collections metadata",
        "href": "https://tamn.snapplanet.io"
    },
    {
        "rel": "child",
        "title": "Flood in the South of France",
        "type": "application/json",
        "matched": 39514,
        "href": "https://tamn.snapplanet.io/catalogs/1245783929/catalog.json"
    },
    [.....etc.....]
]
https://rocket.snapplanet.io