# Utilizing STAC & ISO Metadata to describe spatio-temporal raster data publications

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### lower austria



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"The high-value datasets, as listed in accordance with Article 14(1) shall be made available for re-use in machine-readable format, via suitable APIs and, where relevant, as a bulk download"

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# problem

data management

- ~19200 km²
- 1,25km<sup>2</sup> per tile
- ~15500 tiles/data product

raster data products (~40)

- orthophoto
- digital surface model
- digital terrain model
- derived products: hillshades, slope, aspect, …



## data characteristics

orthophoto & airborne laserscan

- data capture in blocks
- full coverage in 3/10 years
- historical data since 2002
- different resolutions, bands, scanners, ...
- lineage and process steps for derived products



~650.000 metadata datasets ~30TB of data

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- idea born ~2015 with the Open Imagery Network project
- OGC Community Standard & compatible with OGC API Features
- minimal stable core metadata model with extensions
  - electro-optical (bands, cloud\_cover, wavelength, ...)
  - pointcloud (density, count, encoding, dimensions, ...)
  - projection (epsg code, transform, ...)

• easy to create and host (static hosting of data and metadata)

## stac core objects





# stac extensions (excerpt)



raster:bands (per asset)

- nodata
- sampling
- data\_type
- bits\_per\_sample
- spatial\_resolution
- statistics
- unit
- scale
- offset
- histogram

projection (per item/asset)

- epsg
- wkt2
- projjson
- geometry (footprint)
- bbox (in crs)
- centroid
- shape
- transform

## **ISO metadata XML**





## stac vs. iso metadata



- stac metadata well suited for discovery/filtering/querying for multiple types of data (raster, pointcloud, satellite data, ...)
- ISO19115 metadata well suited to describe the data in detail (lineage, process steps, available services, sensor details, ...)
- ISO19115 metadata more extensive and provides additional information on "is the data useable for my use case"
- ISO19115 XML metadata can be added as asset (role iso-19115) on item (tile) level and on collection level



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