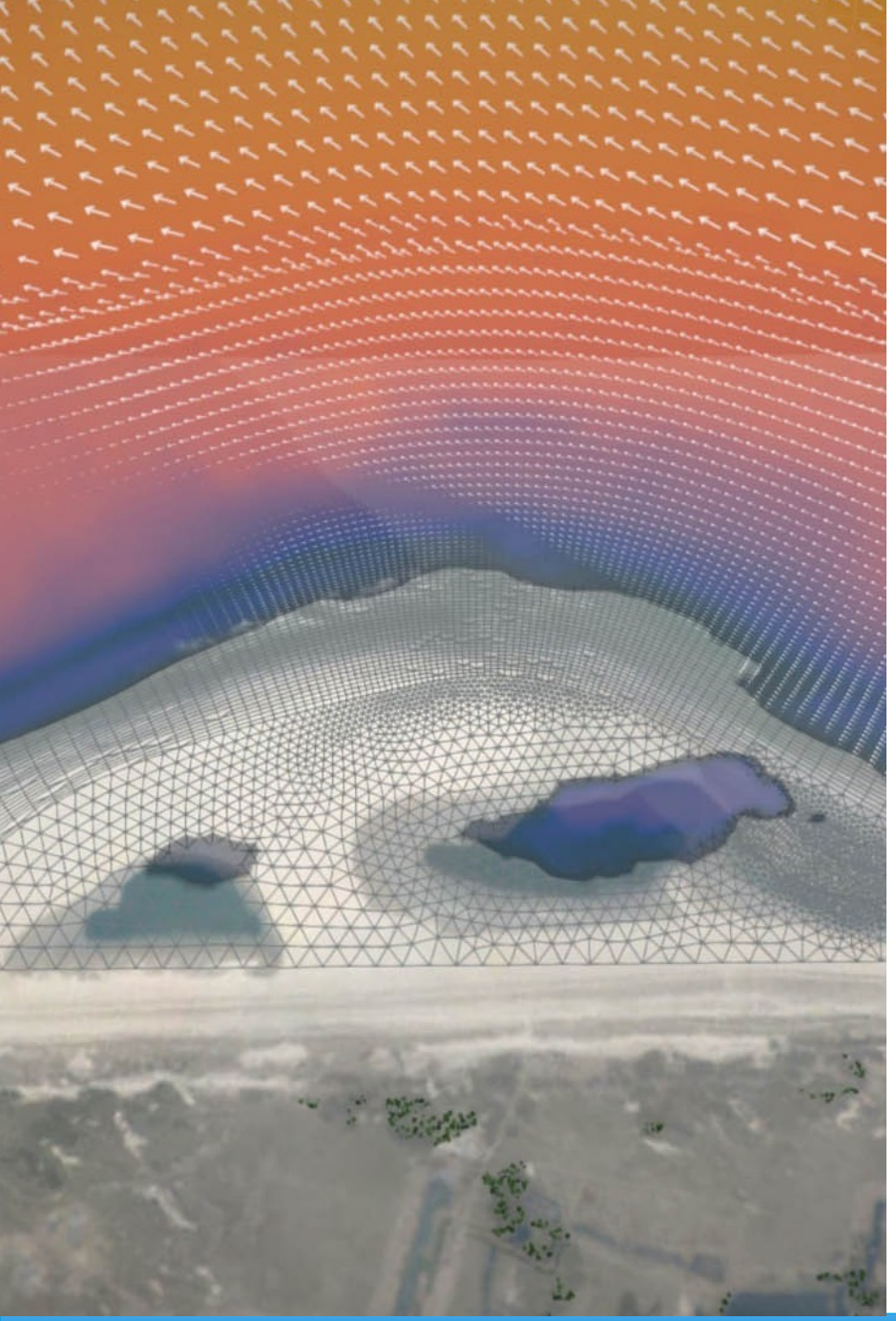


DIGISHAPE
DATASCIENCE
FOR
DELTAS

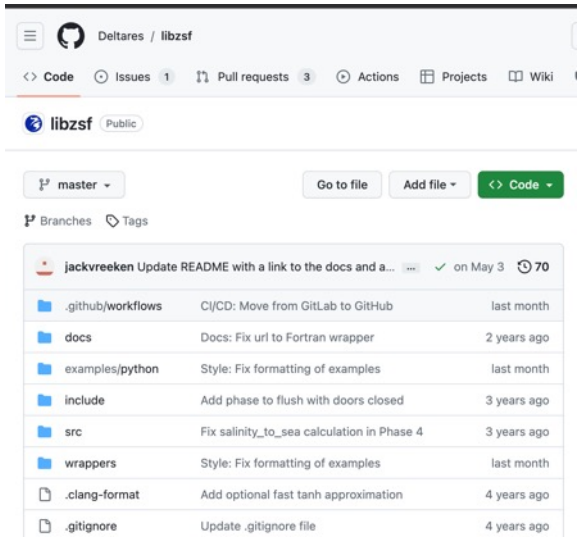
Digishape Open Source Platform

FEDOR BAART

DigiShape TKI project

- Starts in 2023 (with some delay)
- Witteveen & Bos, Van Oord, Deltares, …
- Facilitate sharing of Data, Models & Tools
- For projects
  - Projects need a data platform
  - Data and code together
  - Share and reuse code
  - Disseminate data and code

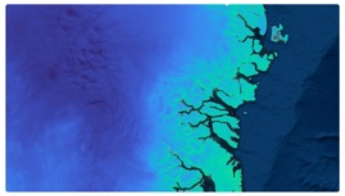
Developments



Landsat Collection

The Landsat program provides provides a comprehensive, conti
imagery of the Earth's surface from 1972 to present.

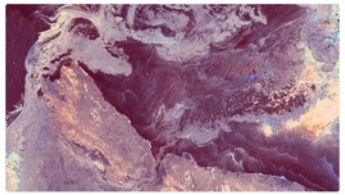
Landsat USGS NASA Satellite Global Imagery



MODIS Version 6.1 Products

The MODIS instrument operates on both the Terra and Aqua sp
surface of the Earth within one or two days. The derived data pr
cryosphere, land, and ocean features utilized in studies across v

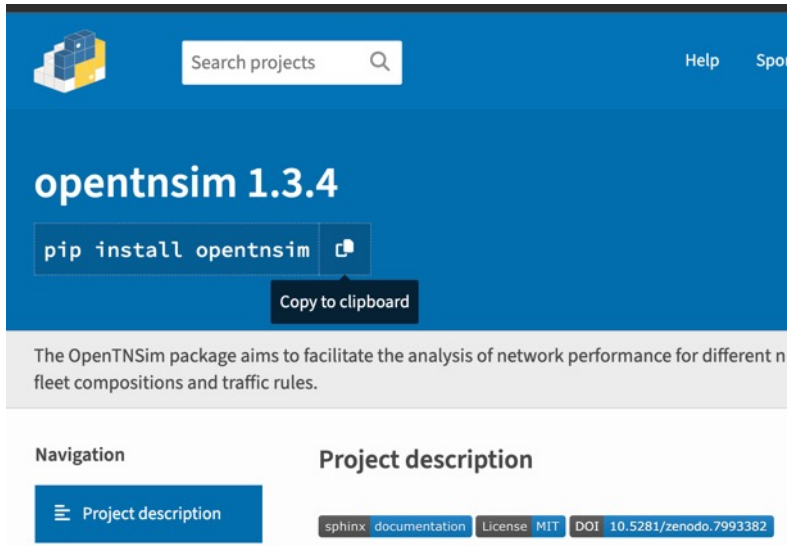
MODIS NASA USGS Satellite Global Imagery



Sentinel-1 Synthetic Aperture Radar (SAR)

Sentinel-1 comprises a constellation of two polar-orbiting satell
performing C-band synthetic aperture radar imaging.

ESA Copernicus Sentinel C-Band SAR



Assumptions

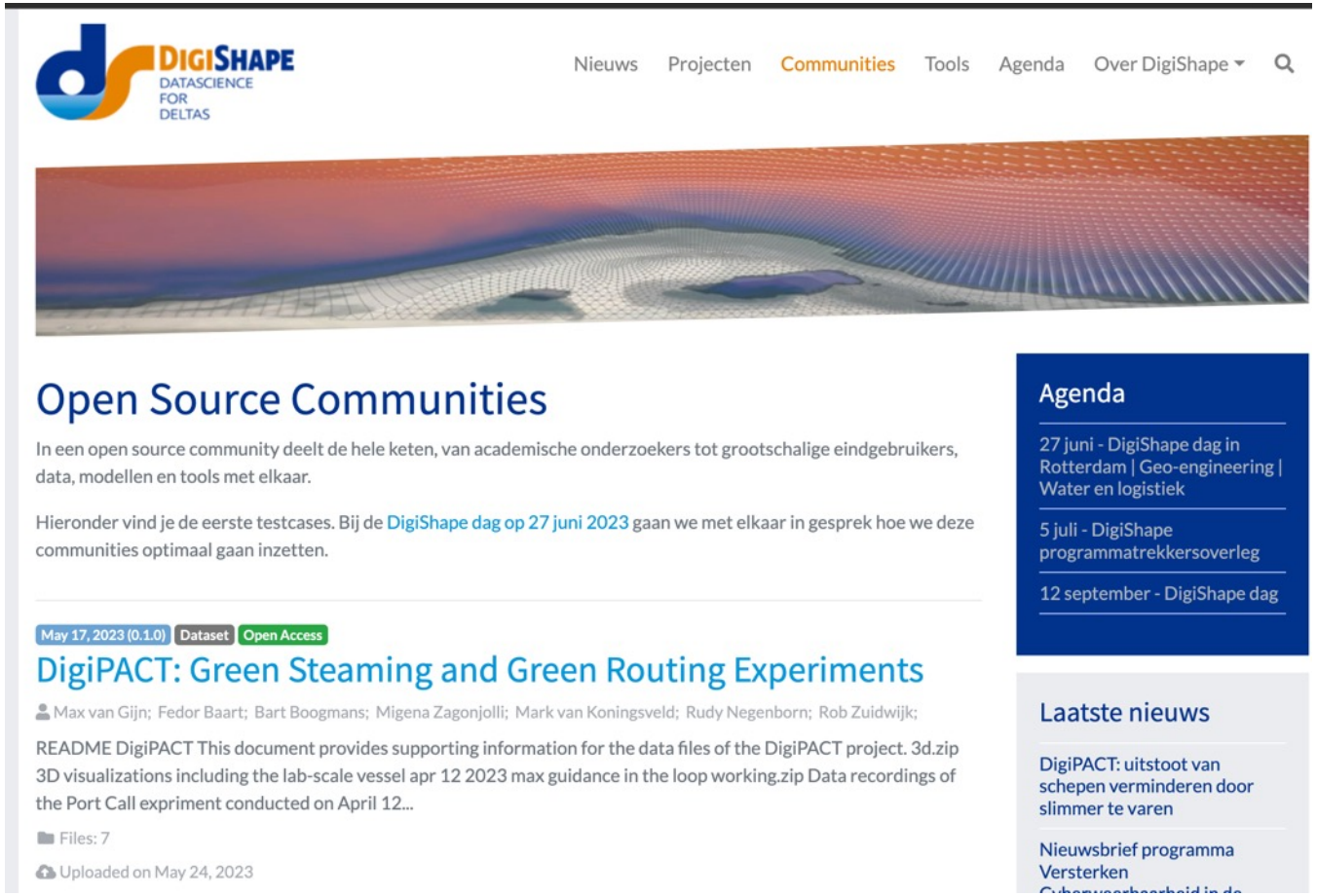
Well established

- **Share source:** Organisations *share* data through version control repositories
- **Share tools:** Organisations *share* package software and provide access to package repositories
- **Share data:** Organisations *share* data in data lakes and cloud buckets

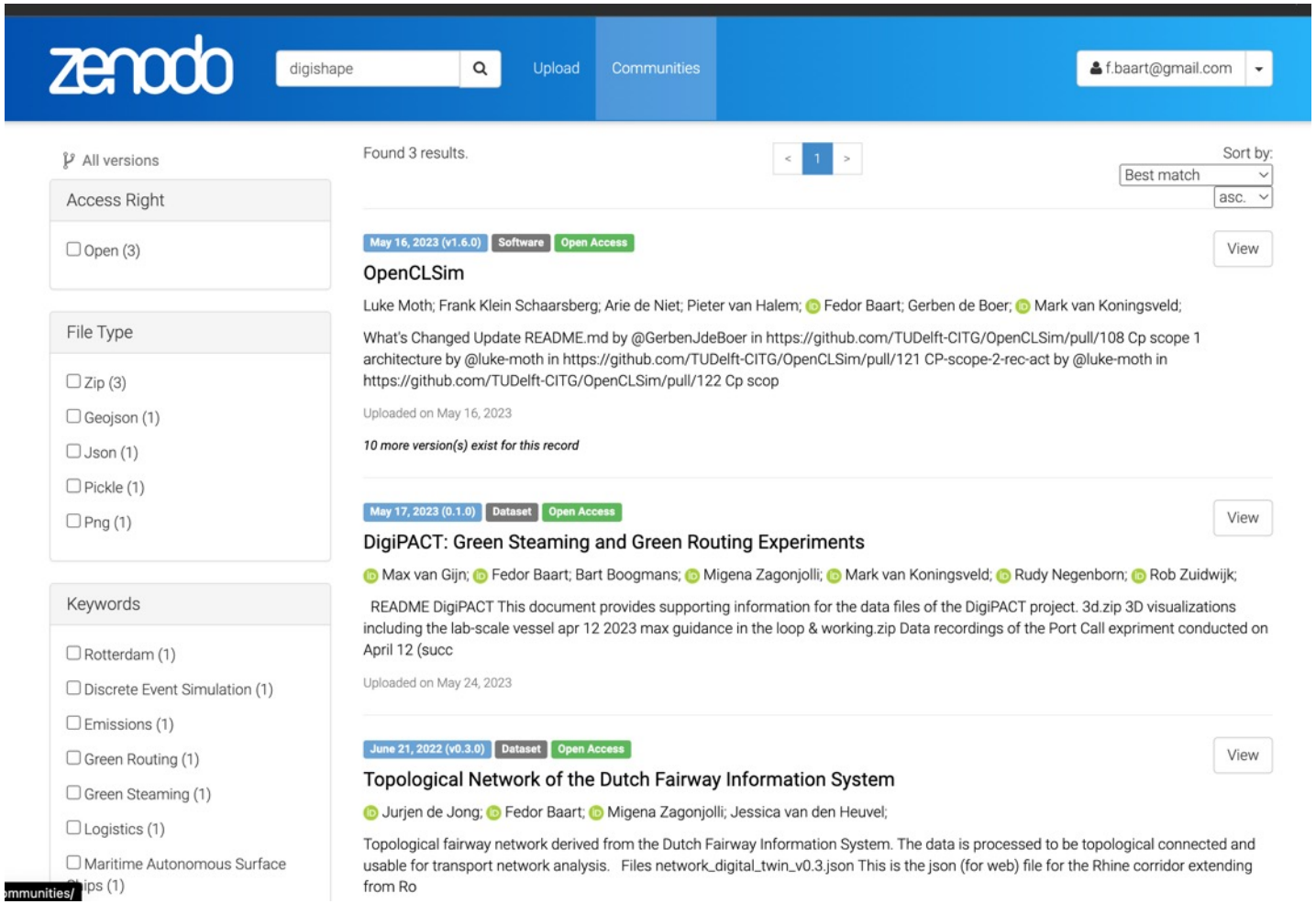
Improve

- **Archive data:** Organisations do not always have long term public *archives* of data models and tools
- **Findable**: Organisations do not always provide all relevant *metadata* about data, models, tools
- **Citable:** Organisations do not always provide a *citable* source for data, models and tools.

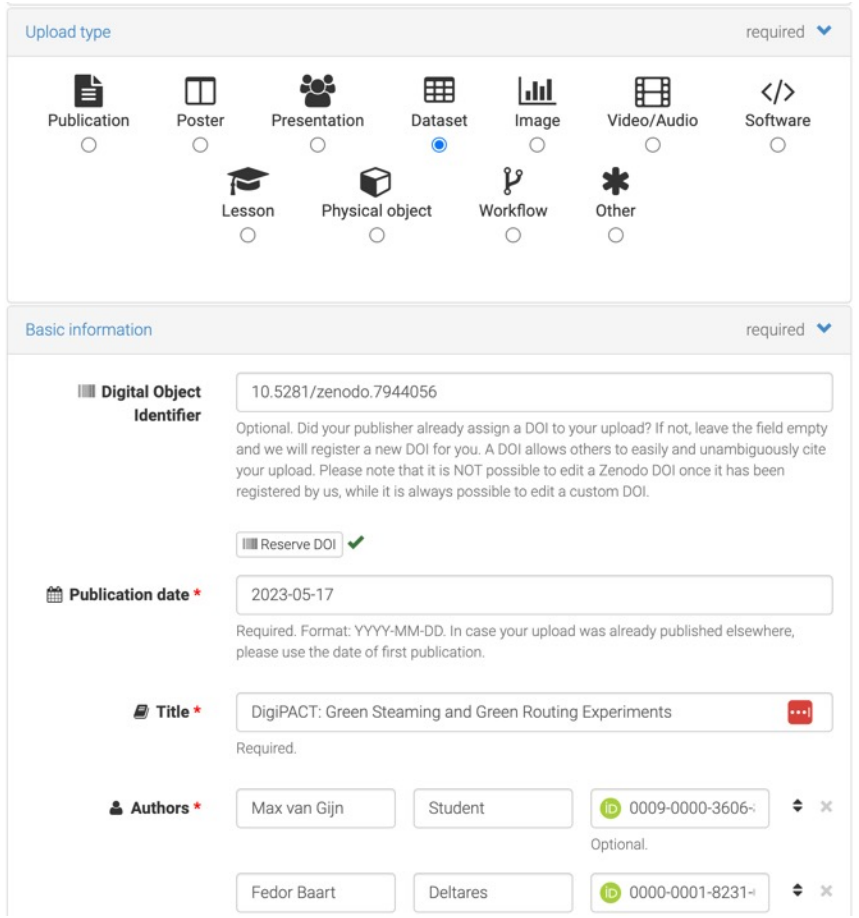
DigiShape open source communities



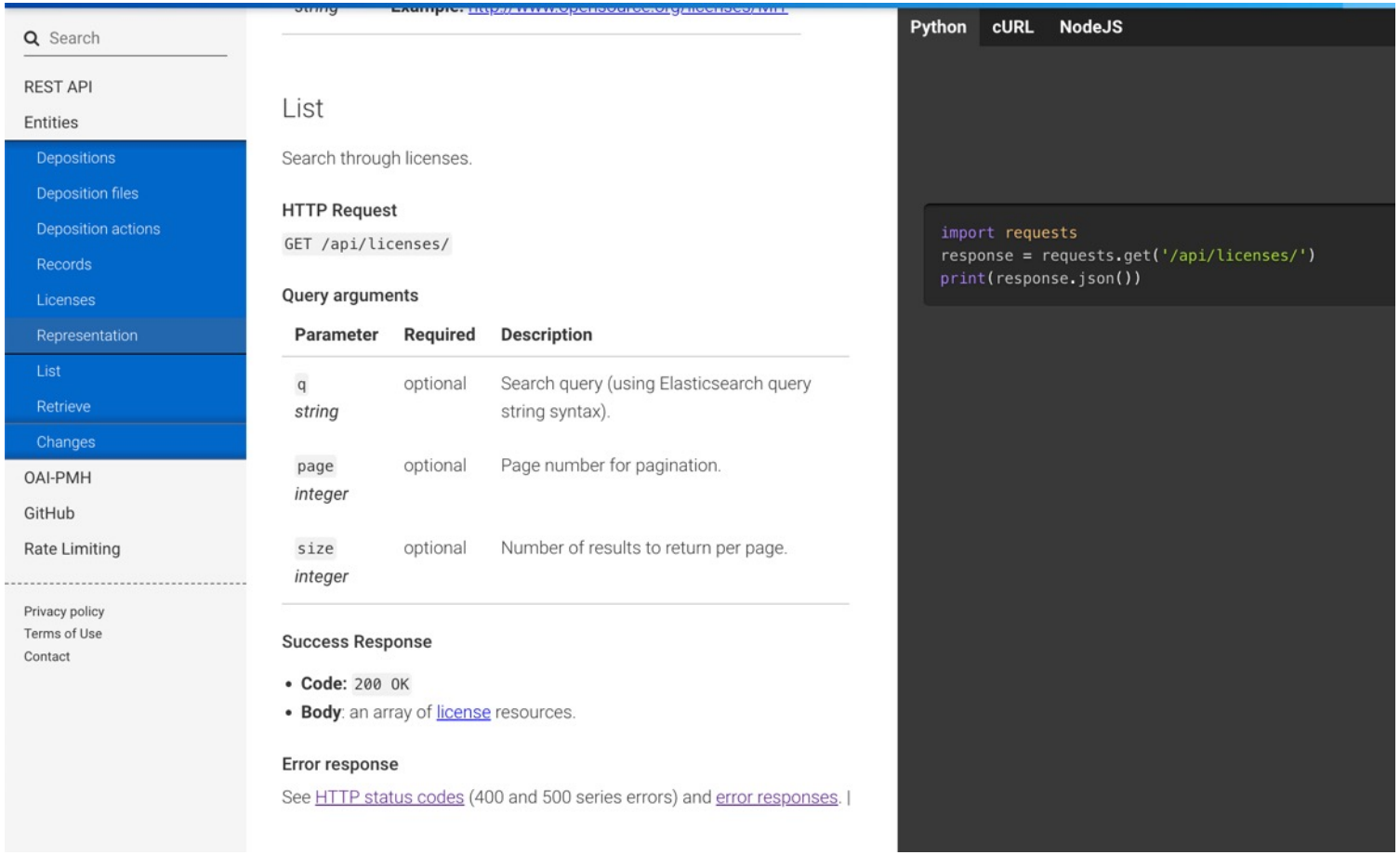
Underlying platform



Metadata editor



API


Search
REST API
Entities
Depositions
Deposition files
Deposition actions
Records
Licenses
Representation
List
Retrieve
Changes
OAI-PMH
GitHub
Rate Limiting
Privacy policy
Terms of Use
Contact
List
Search through licenses.
HTTP Request
GET /api/licenses/
Query arguments
Parameter
Required
Description
q
string
optional
Search query (using Elasticsearch query string syntax).
page
integer
optional
Page number for pagination.
size
integer
optional
Number of results to return per page.
Success Response
Code: 200 OK
Body: an array of license resources.
Error response
See HTTP status codes (400 and 500 series errors) and error responses.
Python
cURL
NodeJS
import requests
response = requests.get('/api/licenses/')
print(response.json())

Questions, discussions

- Courses / workshops
  - script –> package
  - sharing data in the cloud
  - data integration and digital twins
- Current state of sharing data, models and tools
  - Challenges
  - Ideas