

# Digishape Open Source Platform

FEDOR BAART

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# DigiShape TKI project

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- 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

The screenshot shows the GitHub repository page for 'libzsf' by 'Deltares'. The repository is public and has a 'master' branch. The file list includes:

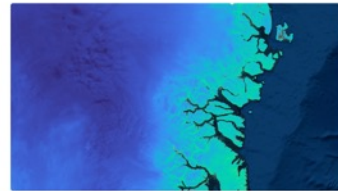
File	Description	Last Updated
.github/workflows	CI/CD: Move from GitLab to GitHub	last month
docs	Docs: Fix url to Fortran wrapper	2 years ago
examples/python	Style: Fix formatting of examples	last month
include	Add phase to flush with doors closed	3 years ago
src	Fix salinity_to_sea calculation in Phase 4	3 years ago
wrappers	Style: Fix formatting of examples	last month
.clang-format	Add optional fast tanh approximation	4 years ago
.gitignore	Update .gitignore file	4 years ago



## Landsat Collection

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

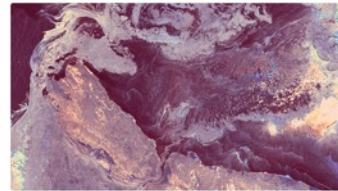
Landsat USGS NASA Satellite Global Imagery



## MODIS Version 6.1 Products

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

MODIS NASA USGS Satellite Global Imagery



## Sentinel-1 Synthetic Aperture Radar (SAR)

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

ESA Copernicus Sentinel C-Band SAR

The screenshot shows the GitHub project page for 'opentnsim 1.3.4'. The page features a search bar, a 'pip install opentnsim' button with a 'Copy to clipboard' tooltip, and a description: 'The OpenTNSim package aims to facilitate the analysis of network performance for different network fleet compositions and traffic rules.' The navigation menu includes 'Project description', and the project description section lists 'sphinx documentation', 'License MIT', and 'DOI 10.5281/zenodo.7993382'.



# Assumptions

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## 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

**DIGISHAPE**  
DATASCIENCE  
FOR  
DELTAS

Nieuws Projecten **Communities** Tools Agenda Over DigiShape

## Open Source Communities

In een open source community deelt de hele keten, van academische onderzoekers tot grootschalige eindgebruikers, data, modellen en tools met elkaar.

Hieronder vind je de eerste testcases. Bij de [DigiShape dag op 27 juni 2023](#) gaan we met elkaar in gesprek hoe we deze communities optimaal gaan inzetten.

May 17, 2023 (0.1.0) Dataset Open Access

### DigiPACT: Green Steaming and Green Routing Experiments

Max van Gijn; Fedor Baart; Bart Boogmans; Migena Zagonjoli; Mark van Koningsveld; Rudy Negenborn; Rob Zuidwijk;

README DigiPACT This document provides supporting information for the data files of the DigiPACT project. 3d.zip 3D visualizations including the lab-scale vessel apr 12 2023 max guidance in the loop working.zip Data recordings of the Port Call experiment conducted on April 12...

Files: 7

Uploaded on May 24, 2023

#### Agenda

- 27 juni - DigiShape dag in Rotterdam | Geo-engineering | Water en logistiek
- 5 juli - DigiShape programmatrekkersoverleg
- 12 september - DigiShape dag

#### Laatste nieuws

- DigiPACT: uitstoot van schepen verminderen door slimmer te varen
- Nieuwsbrief programma Versterken Cyberveiligheid in de



# Underlying platform

The screenshot shows the Zenodo search results page for the query 'digishape'. The page is divided into a header, a left sidebar with filters, and a main content area with search results.

**Header:** Zenodo logo, search bar with 'digishape', 'Upload' button, 'Communities' button, and user profile 'f.baart@gmail.com'.

**Left Sidebar:**

- Access Right:**  Open (3)
- File Type:**  Zip (3),  Geojson (1),  Json (1),  Pickle (1),  Png (1)
- Keywords:**  Rotterdam (1),  Discrete Event Simulation (1),  Emissions (1),  Green Routing (1),  Green Steaming (1),  Logistics (1),  Maritime Autonomous Surface Ships (1)

**Main Content Area:**

Found 3 results. < 1 > Sort by: Best match, asc.

**Result 1:** May 16, 2023 (v1.6.0) Software Open Access View  
**OpenCLSim**  
Luke Moth; Frank Klein Schaarsberg; Arie de Niet; Pieter van Halem; Fedor Baart; Gerben de Boer; Mark van Koningsveld;  
What's Changed Update README.md by @GerbenJdeBoer in https://github.com/TUdelft-CITG/OpenCLSim/pull/108 Cp scope 1 architecture by @luke-moth in https://github.com/TUdelft-CITG/OpenCLSim/pull/121 CP-scope-2-rec-act by @luke-moth in https://github.com/TUdelft-CITG/OpenCLSim/pull/122 Cp scop  
Uploaded on May 16, 2023  
10 more version(s) exist for this record

**Result 2:** May 17, 2023 (0.1.0) Dataset Open Access View  
**DigiPACT: Green Steaming and Green Routing Experiments**  
Max van Gijn; Fedor Baart; Bart Boogmans; Migena Zagonjoli; Mark van Koningsveld; Rudy Negenborn; Rob Zuidwijk;  
README DigiPACT This document provides supporting information for the data files of the DigiPACT project. 3d.zip 3D visualizations including the lab-scale vessel apr 12 2023 max guidance in the loop & working.zip Data recordings of the Port Call experiment conducted on April 12 (succ  
Uploaded on May 24, 2023

**Result 3:** June 21, 2022 (v0.3.0) Dataset Open Access View  
**Topological Network of the Dutch Fairway Information System**  
Jurjen de Jong; Fedor Baart; Migena Zagonjoli; Jessica van den Heuvel;  
Topological fairway network derived from the Dutch Fairway Information System. The data is processed to be topological connected and usable for transport network analysis. Files network\_digital\_twin\_v0.3.json This is the json (for web) file for the Rhine corridor extending from Ro



# Metadata editor

Upload type required ▾

Publication  Poster  Presentation  Dataset  Image  Video/Audio  Software

Lesson  Physical object  Workflow  Other

Basic information required ▾

**Digital Object Identifier**

Optional. Did your publisher already assign a DOI to your upload? If not, leave the field empty and we will register a new DOI for you. A DOI allows others to easily and unambiguously cite your upload. Please note that it is NOT possible to edit a Zenodo DOI once it has been registered by us, while it is always possible to edit a custom DOI.

Reserve DOI ✓

**Publication date \***

Required. Format: YYYY-MM-DD. In case your upload was already published elsewhere, please use the date of first publication.

**Title \***

Required.

**Authors \***

<input type="text" value="Max van Gijn"/>	<input type="text" value="Student"/>	<input type="text" value="0009-0000-3606-"/>	✕
		Optional.	
<input type="text" value="Fedor Baart"/>	<input type="text" value="Deltares"/>	<input type="text" value="0000-0001-8231-"/>	✕



# API

Q Search

REST API

Entities

- Depositions
- Deposition files
- Deposition actions
- Records
- Licenses
- Representation
- List
- Retrieve
- Changes

OAI-PMH

GitHub

Rate Limiting

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Privacy policy

Terms of Use

Contact

String Example: [https://www.digishape.nl/api/licenses/](#)

## List

Search through licenses.

### HTTP Request

```
GET /api/licenses/
```

### Query arguments

Parameter	Required	Description
<code>q</code> <i>string</i>	optional	Search query (using Elasticsearch query string syntax).
<code>page</code> <i>integer</i>	optional	Page number for pagination.
<code>size</code> <i>integer</i>	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

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