



## Project achievements

Development of a Julia client for openEO

NoR Request 3712yf

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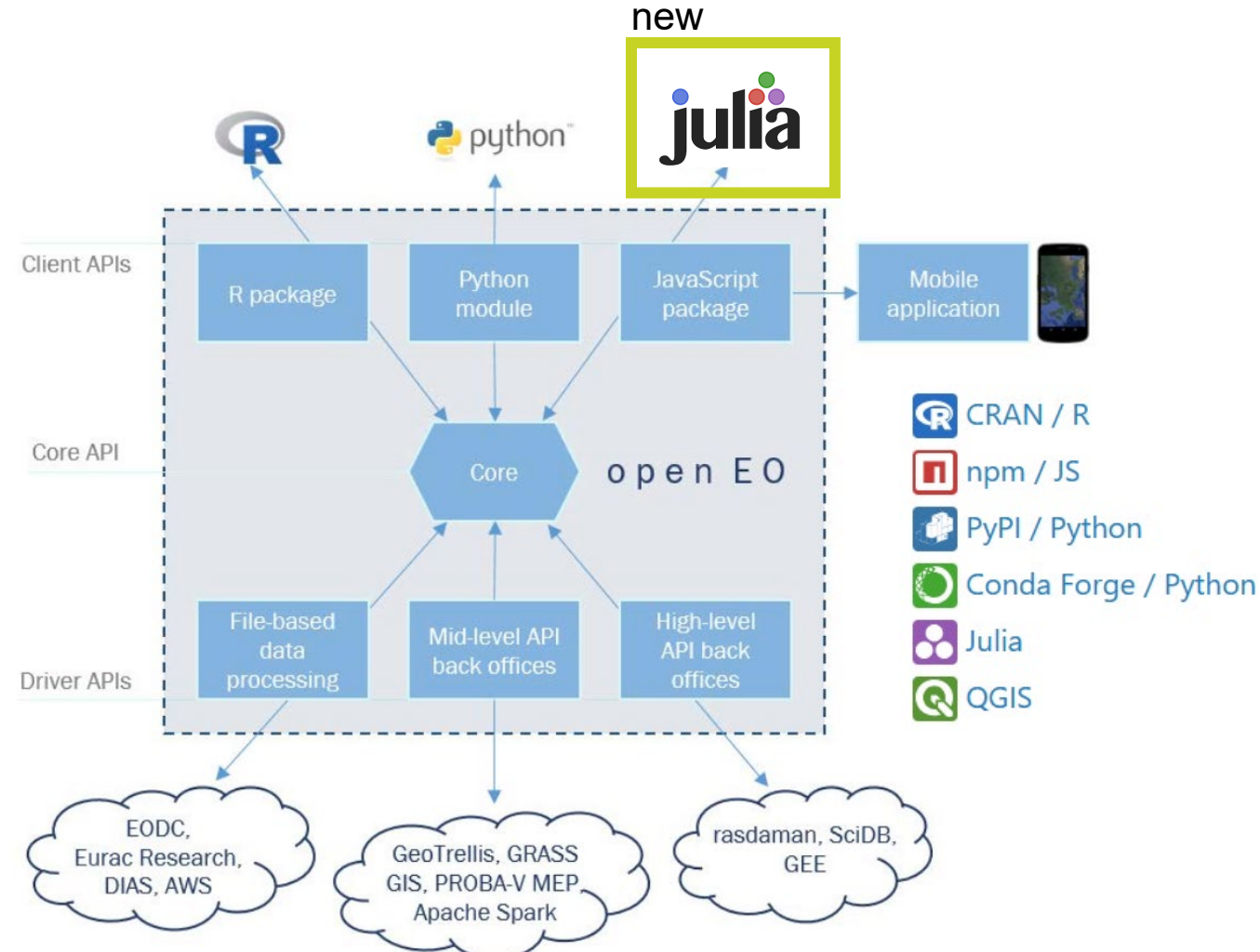
# Analyse EO data in various languages using openEO



openEO develops an API that allows users to connect to Earth observation cloud back-ends in a simple and unified way.

The project maintains the API and process specifications, and an open-source ecosystem with clients and server implementations.

openEO is not to be confused with independent services that implement the specifications such as [openEO Platform](#) or [CDSE](#).  
For a list of services built on top of openEO, please visit the [openEO Hub](#).



<https://zenodo.org/records/1065474>  
<https://openeo.org>

# Julia client for openEO



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danlooo Add funding info ✓ 47d650b · 16 minutes ago 161 Commits

.github/workflows	Remove nightly julia from CI	last month
docs	Fix docs function call load_collection	last month
src	Fix optional and required args	last month
test	Merge pull request #33 from Open-EO/fix_merge_project_in...	last month
.gitignore	Remove output dir	last year
LICENSE	Initial commit	last year
Project.toml	Add mean	9 months ago
README.md	Add funding info	16 minutes ago

README Apache-2.0 license

## OpenEOClient.jl

docs stable docs dev CI passing

A Julia client for [openEO](#) to access big Earth observation cloud back-ends in a simple and unified way.

About

The Julia client for openEO

Readme

Apache-2.0 license

Activity

Custom properties

9 stars

6 watching

2 forks

Report repository

Releases

No releases published

Packages

No packages published

Contributors 3

danlooo Daniel Loos

meggart Fabian Gans

m-mohr Matthias Mohr

https://github.com/Open-EO/openeo-julia-client

# Calculate EVI on CDSE using OpenEO Client in Julia



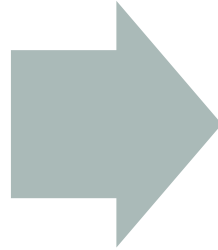
```
using OpenEOClient
using Statistics
con = connect("openeo.dataspace.copernicus.eu/openeo", "", OpenEOClient.oidc_auth)
cube = DataCube(con, "SENTINEL2_L2A",
    BoundingBox(west=5.14, south=51.17, east=5.17, north=51.19),
    ("2021-02-01", "2021-02-10"), ["B02", "B04", "B08"])
blue = cube["B02"] * 0.0001
red = cube["B04"] * 0.0001
nir = cube["B08"] * 0.0001
evi = @. 2.5 * (nir - red) / (nir + 6.0 * red - 7.5 * blue + 1.0)
mean_evi = mean(evi, dims = "t")
#openEO DataCube
#   collection: SENTINEL2_L2A
#   dimensions: ["x", "y"]
#   bands: Unknown
#   spatial extent: nothing
#   temporal extent: nothing
#   license: proprietary
#   connection: https://openeo.dataspace.copernicus.eu/openeo/
```

# Achievements of openEO client for Julia



## Past

- Julia allows to write user-friendly and efficient code
- Only few libraries to process EO data



## Now

- First and only openEO client for Julia
- Access of all openEO processes within Julia
- Julia users can now use CDSE

NoR helped us to

- test our software
- implement OpenID connect authentication, e.g. for CDSE