

DOME 4.0 marketplace ecosystem: register API specification

This part of the documentation refers to the registration of API specification of the DOME 4.0 marketplace.

The DOME 4.0 platform, in addition to enabling the discovery of registered data providers (catalog data and connectors) and data consumers (tools and services), also connects compatible data providers and data consumers via semantic linkage. This semantic linkage is realised in the form of an API specification. **This can be checked on the info page of the respective connectors and tools under the “Conforms to standard”** as shown in Figure 1.

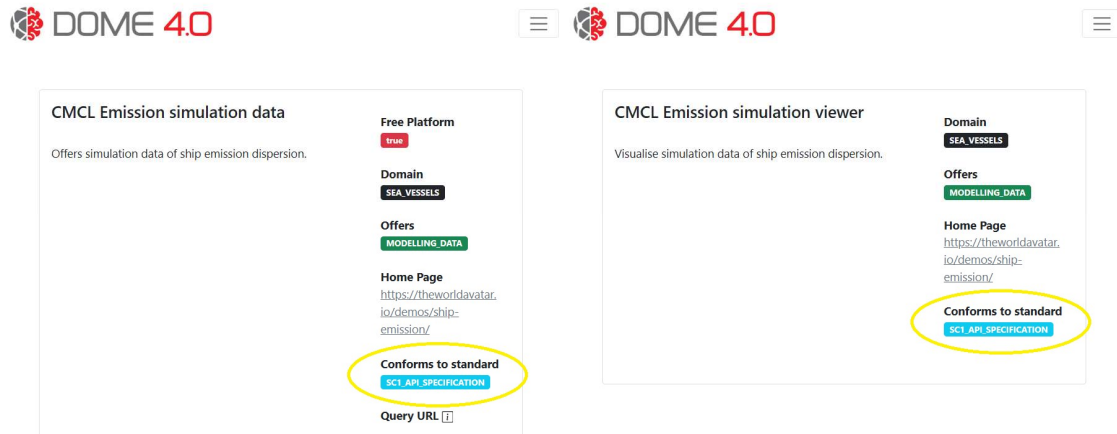


Figure 1: Connectors and tools may conform to API specifications.

When users search for a dataset on the DOME 4.0 platform, the platform will automatically discover tools that comply to the same API specifications as the data provider of the dataset. A button will appear on the results page as shown in Figure 2, which allows users to pass the dataset to the linked tool which further process the dataset.

CMCL Emission simulation data

Offers simulation data of ship emission dispersion.

Metadata

```
{
  "Dataset": [
    "https://theworldavatar.io/demos/ship-emission/dispersion-interactor/GetRaster?fil"
  ],
  "IssueDate": "2024-09-20",
  "License": "MIT",
  "Title": "Nitrogen oxides emission in Plymouth at 2022-06-27 10:10:33",
  "URL": "https://theworldavatar.io/demos/ship-emission/dispersion-interactor/GetRaster?",
  "dataCreator": "CMCL",
  "dataPublisher": "CMCL",
  "keyword": "Plymouth,Nitrogen oxides,ship,emission"
}
```

Data

```
{
  "Centroid": [
    -4.15,
    50.35
  ],
  "SRID": 32630,
  "Scope": "POLYGON ((-4.3 50.2, -4 50.2, -4 50.5, -4.3 50.5, -4.3 50.2))",
  "file": "https://theworldavatar.io/demos/ship-emission/dispersion-interactor/GetRaster",
  "height": 0,
  "label": "Plymouth",
  "pollutant": "Nitrogen oxides",
  "time": "2022-06-27T10:10:33"
}
```

Free Platform
true

Domain
SEA_VESSELS

Offers
MODELLING_DATA

Home Page
<https://theworldavatar.io/demos/ship-emission/>

Conforms to standard
SCL_API_SPECIFICATION

FAIR score(s)
[FOOPI](#) score: 4%

Query URL [\[?\]](#)
<https://nextgen.dome40.io/api/discover/results/CMCL>

DataInstance URL [\[?\]](#)
[https://nextgen.dome40.io/api/discover/results/datum/CMCL?search_string=ship&keyword=Plymouth Nitrogen oxides.ship.emission](https://nextgen.dome40.io/api/discover/results/datum/CMCL?search_string=ship&keyword=Plymouth%20Nitrogen%20oxides.ship.emission)

Open in CMCL Emission simulation viewer

Figure 2: The API specification enables linkage between data providers and data consumers.

Users may register additional API specifications to the DOME 4.0 platform for their use cases. This shall be done before the registration of connectors and tools. The registration page may be accessed through the top menu on the webpage “Register” → “Register API Specification”, as shown in Figure 3.

The screenshot displays the DOME 4.0 website interface. At the top left is the DOME 4.0 logo. The navigation menu includes 'Explore', 'Register', 'Showcases', 'About', and 'Contact'. The 'Register' dropdown menu is open, showing options: 'Register Catalog Data', 'Register DOME 4.0 Connector', 'Register DOME 4.0 Tool/Service', 'Register API Specification' (highlighted), and 'Upload Ontology'. Below the navigation is a 'Search for Data' section with a search bar containing 'example keyword: carbon' and a 'Search' button. A link for 'Advanced Search' is also present. To the right, the 'DOME 4.0 Metrics' section features a bar chart titled 'Data Providers and Consumers' with the following data:

Category	Count
Providers	14
Consumers	8

Below the search section is an 'Ontology visualisation' section titled 'DOME Ecosystem Ontology' showing a network diagram. To the right is a 'Showcase in the spotlight' section titled 'Chemistry Knowledge Graph - Marine, Air Quality And Nanoparticles' with a corresponding image.

Figure 3: API specification registration page may be accessed through the top menu.

On the registration page as shown in Figure 4, user needs to specify the name of the API specification. An URL that links to documentation about the API specification may be included optionally. Users will be redirected to a new page that returns a message about the outcome of the registration process, as shown in Figure 5.

Register API specification

Note:

This form is used for registering API specification on DOME. Data and tools are linked if they both conform to the same API specification.

Name of API specification* 

API specification documentation URL 

Register

Figure 4: Registration page for API specification.

Outcome

Registration of API specification is **Successful**
Congratulations!

Figure 5: Outcome of successful API specification.


Upon successful registration of API specification, it should appear in the registration form of catalog data, connectors and tools under “Conforms to a Data Standard”, as shown in Figure 6.


Register DOME 4.0 Connector

Note:

This form is used for registering DOME 4.0 connectors adhering to the Connector API (<https://github.com/DOME4-0/reference-connector>). This allows external data platform to be discoverable on DOME.

Name of your connector as it will show up in the list of providers* 

Human readable description of your connector 

Conforms to a Data Standard: 

- Optimade api specification
- Ids api specification
- Sc1 api specification


Register DOME 4.0 Tool or Service

Note:

This form is used for registering tools or services adhering to the DOME 4.0 tools and service API (<https://github.com/DOME-4-0/Tools-Services-Plugin-Template>). This allows data found through DOME to be processed by external tools or services.

Name of Tool or Service* 

Tool/Service Description 

Conforms to Standard 

- Optimade api specification
- Ids api specification
- Sc1 api specification

Figure 6: registered API specifications should appear and be selected on registration pages for catalog data, connectors and tools.