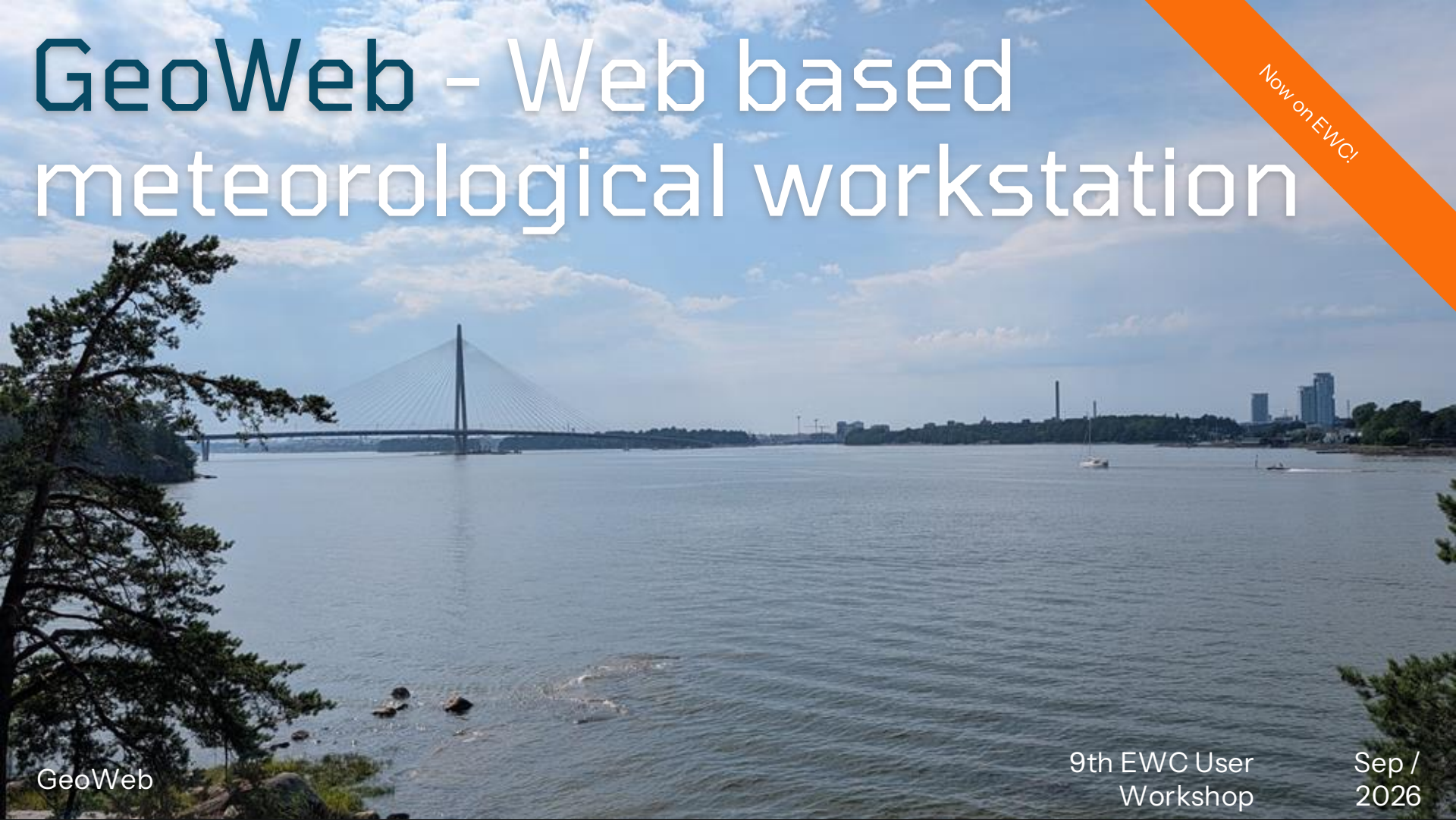
GeoWeb - Web based meteorological workstation

Now on EWC!



GeoWeb

9th EWC User Workshop

Sep / 2026

Contents

- What is GeoWeb
- Demo
- Deploy on EWC
- How to participate

Sampo Savolainen. The Tech Lead of GeoWeb

CTO at Spatineo - software company specializing in Cloud, GIS and SaaS products: Spatineo Discovery, Spatineo Monitor

OGC Member

sampo.savolainen@spatineo.com

The team

GeoWeb Community

Finnish Meteorological Institute

Full member

PO Ville Siiskonen

KNMI

Full member

PO Marcel Molendijk

Met Norway

Full member

PO Lisbeth Bergholt

ECMWF

NEW!

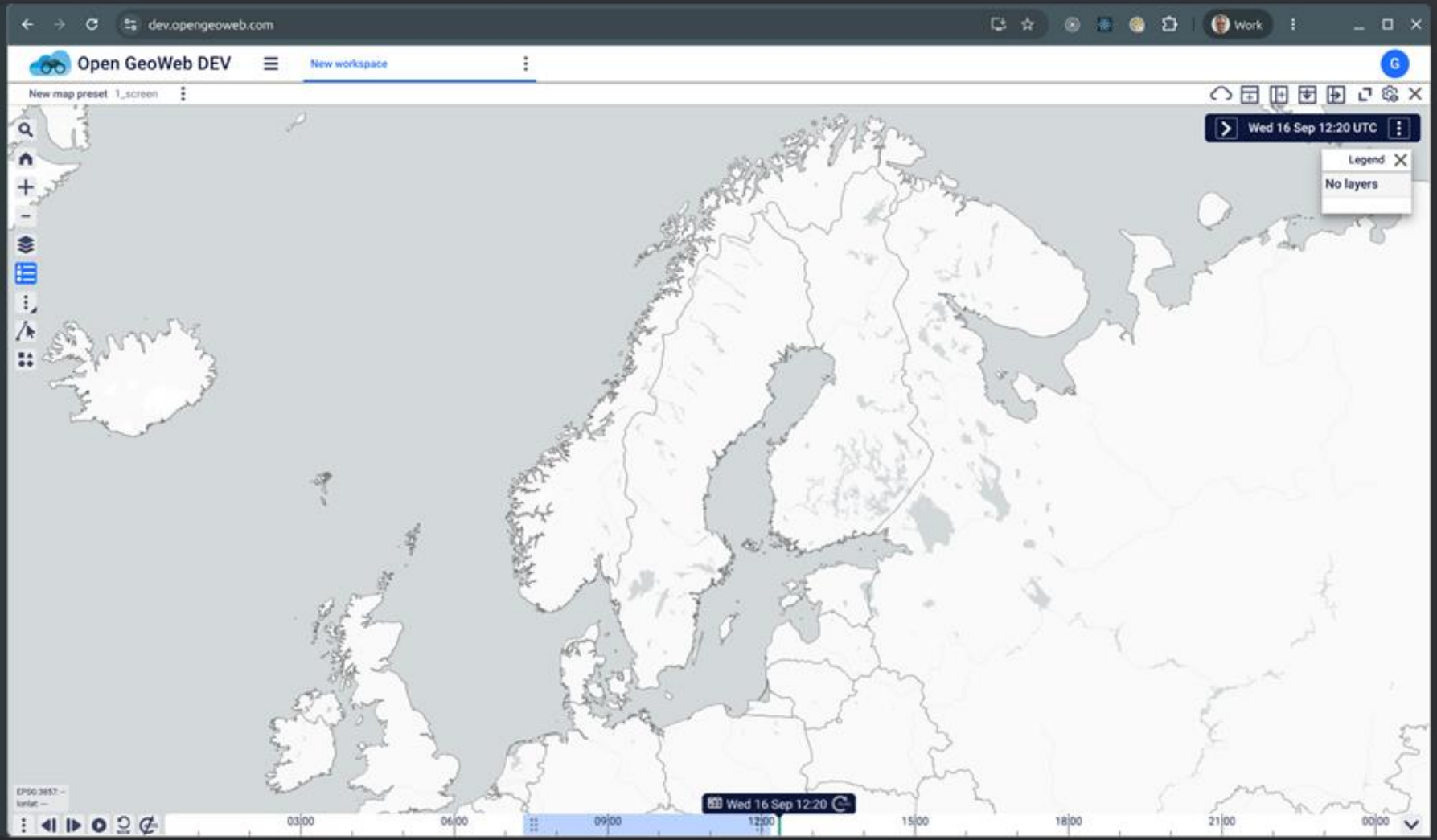
In the process of joining in as a full member!

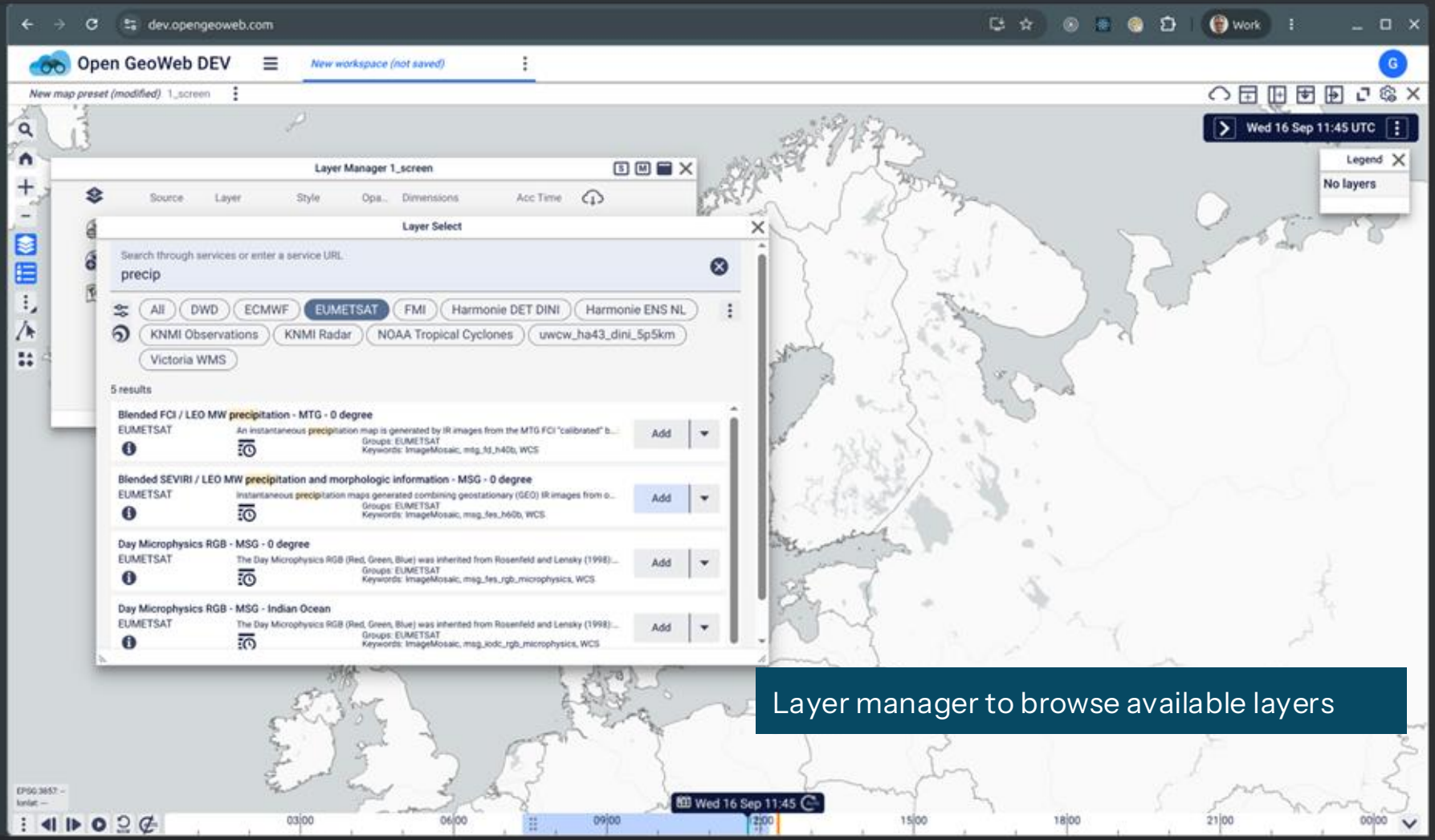
What is it?

GeoWeb

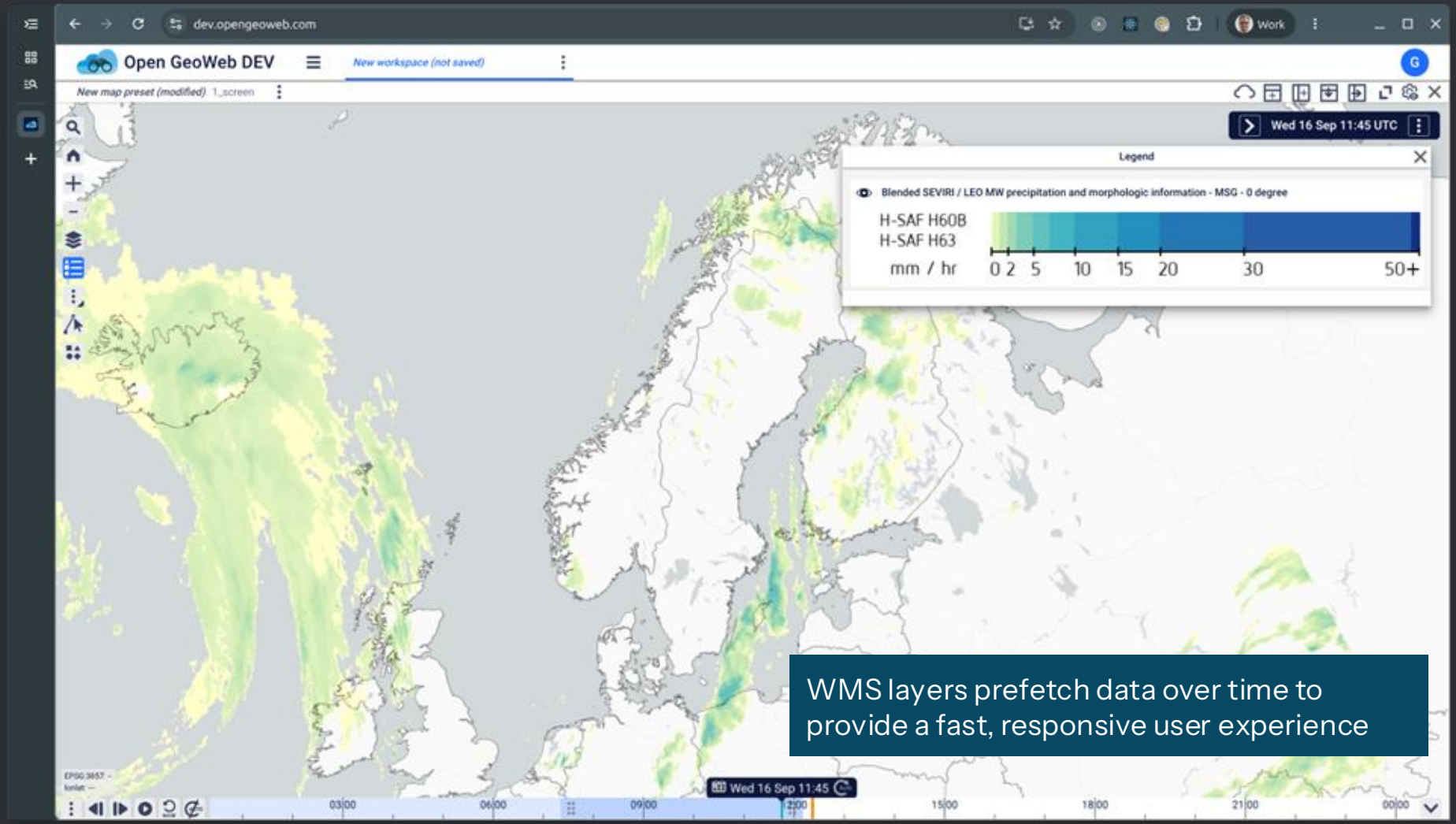
Open Source Meteorological Workstation for the Web

- Frontend browser application
- Core views: Map, Timeseries, Soundings
- Flexible application layout with view syncing
- Preset management
- Integrates with data services: WMS, EDR, STAC, API Records
- Plugin framework for extendibility
- Authentication via OAuth
- Meteorological product editors: public warnings, SIGMET, AIRMET, TAF
- Backends microservices (Python)

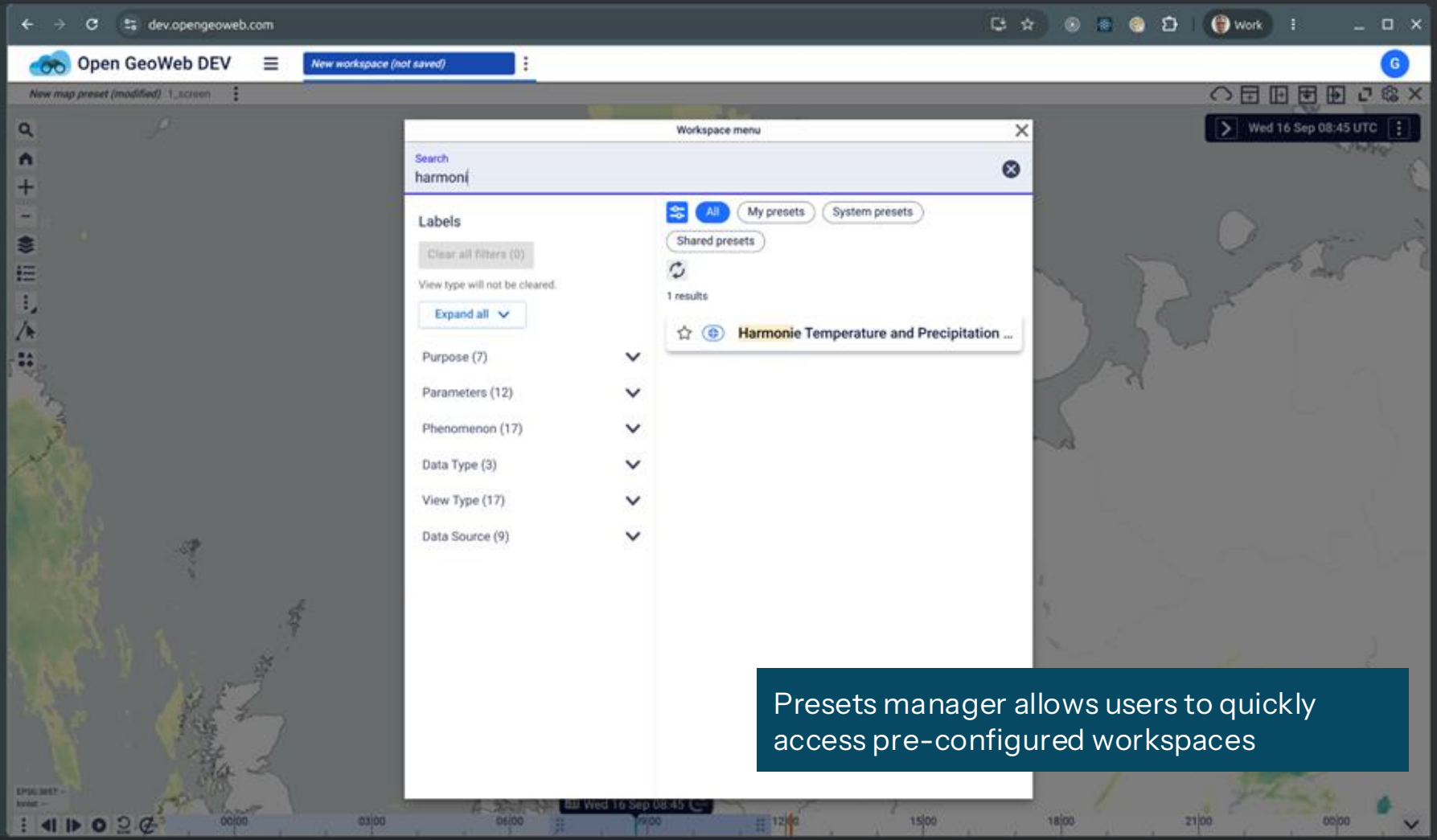

dev.opengeoweb.com
Work
Open GeoWeb DEV
New workspace
G
New map preset 1_screen
Wed 16 Sep 12:20 UTC
Legend
No layers
Wed 16 Sep 12:20
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00

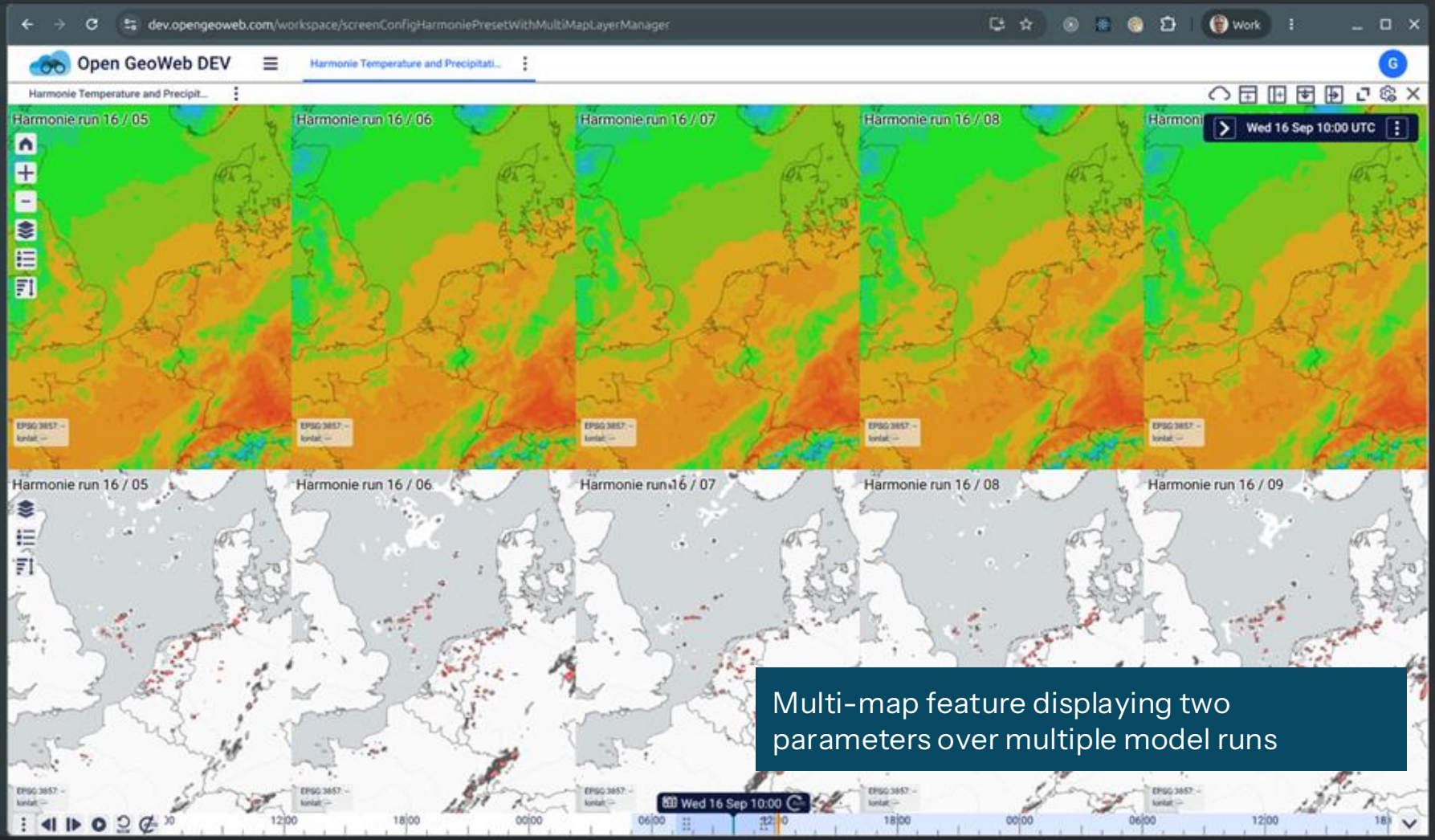


Layer manager to browse available layers

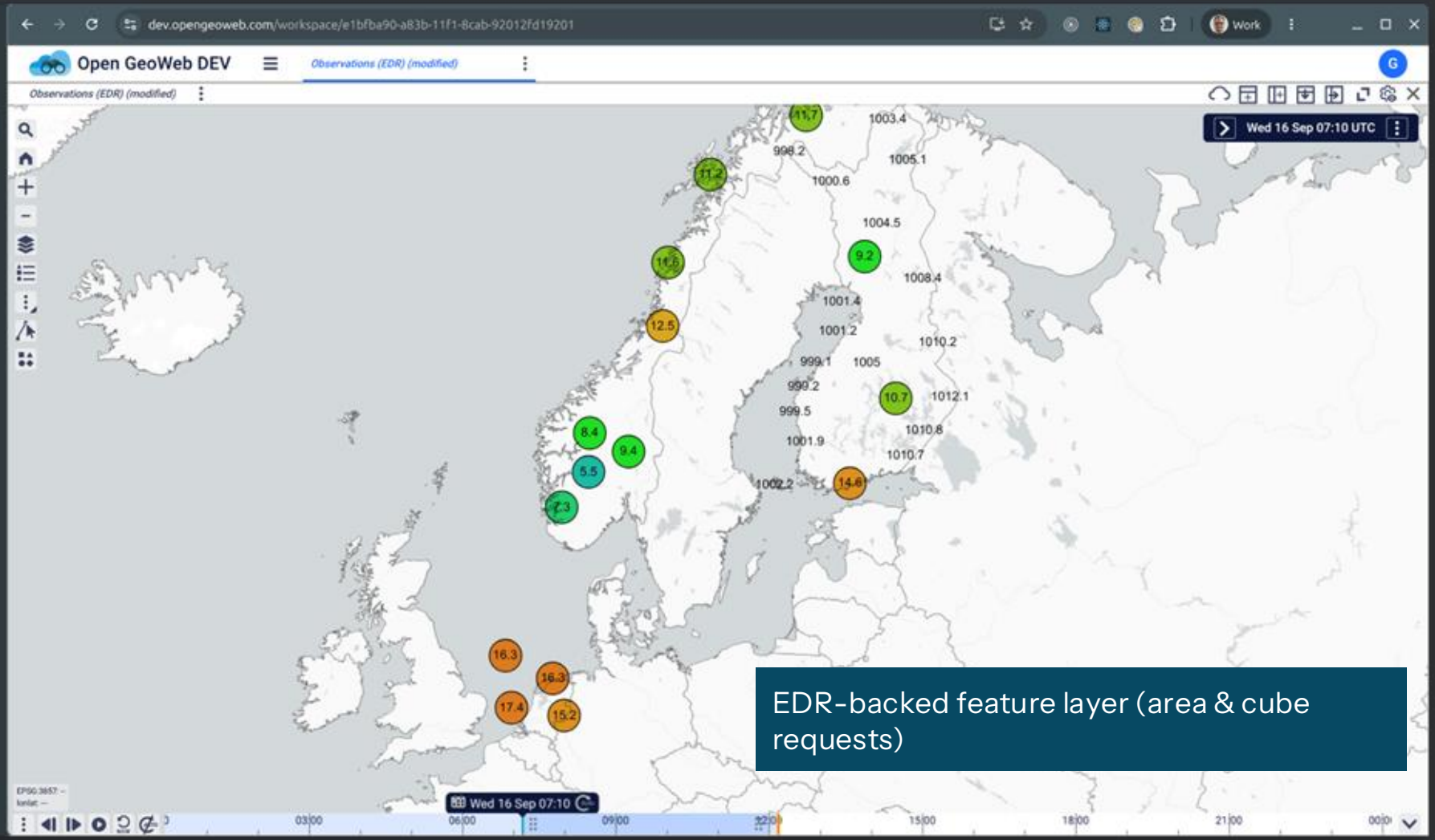


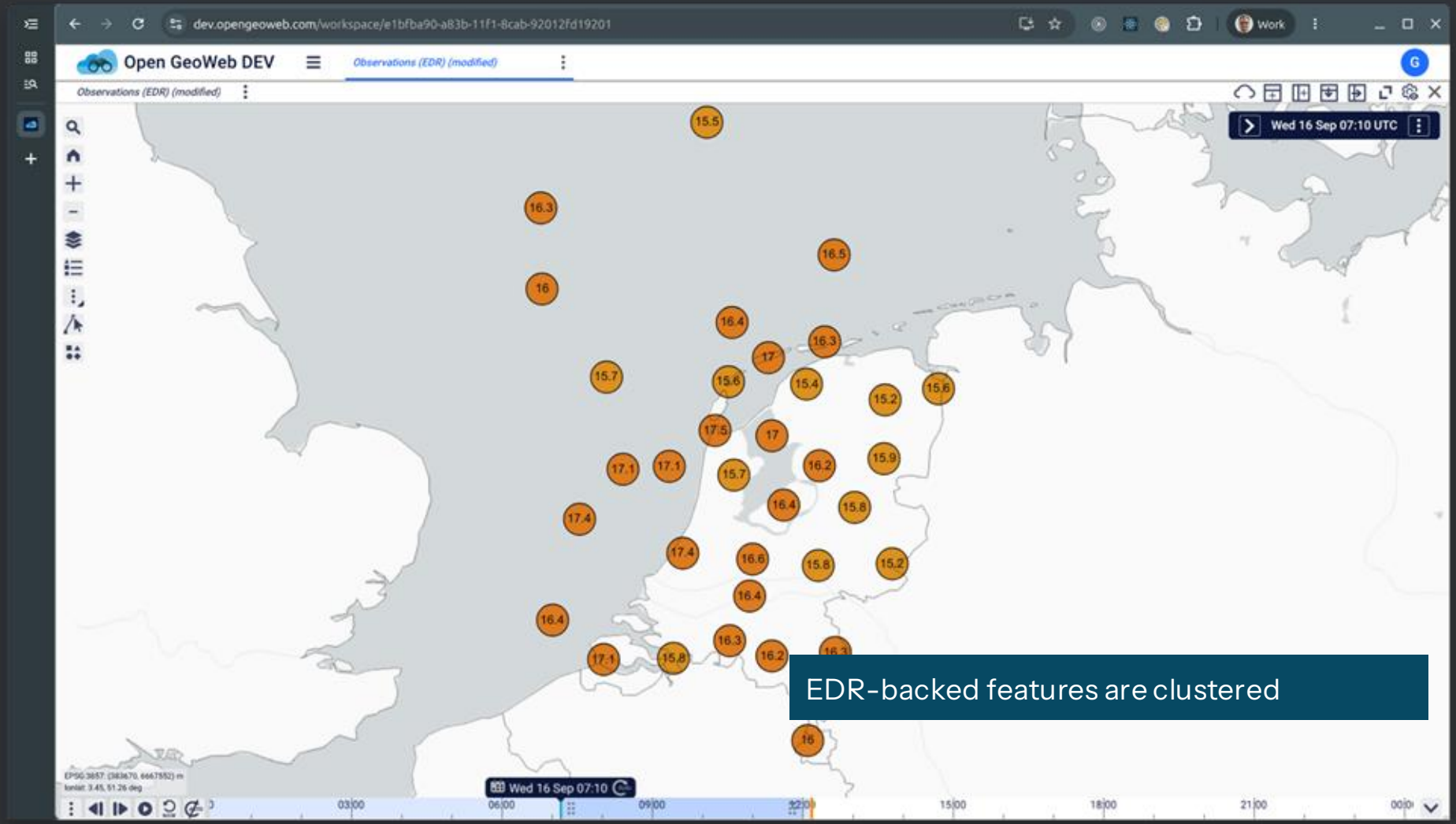
WMS layers prefetch data over time to provide a fast, responsive user experience

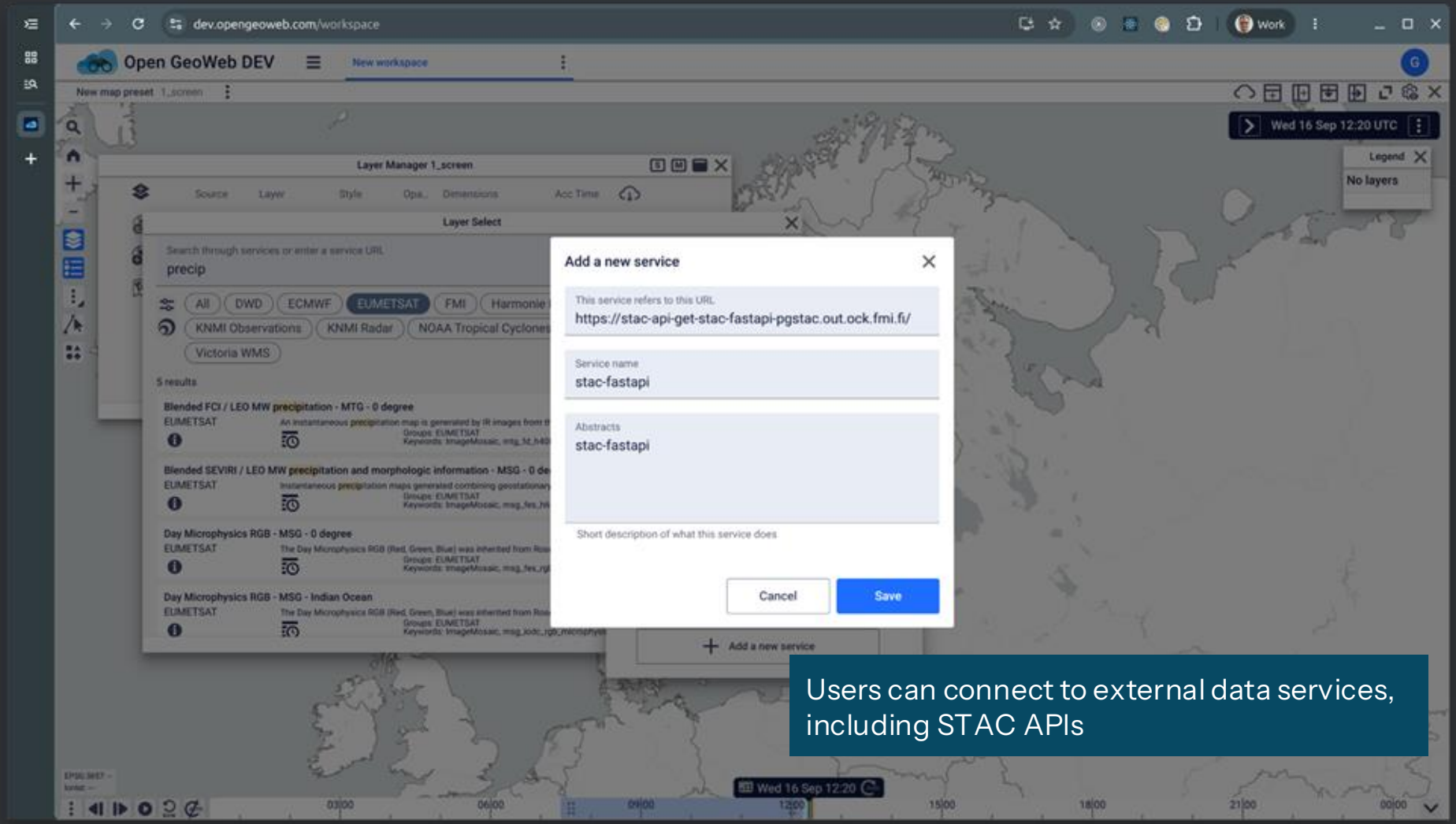

dev.opengeoweb.com
Work
Open GeoWeb DEV
New workspace (not saved)
New map preset (modified)
Wed 16 Sep 08:45 UTC
Workspace menu
Search
harmoni
Labels
Clear all filters (0)
View type will not be cleared.
Expand all
Purpose (7)
Parameters (12)
Phenomenon (17)
Data Type (3)
View Type (17)
Data Source (9)
All
My presets
System presets
Shared presets
1 results
Harmonie Temperature and Precipitation ...
Presets manager allows users to quickly access pre-configured workspaces



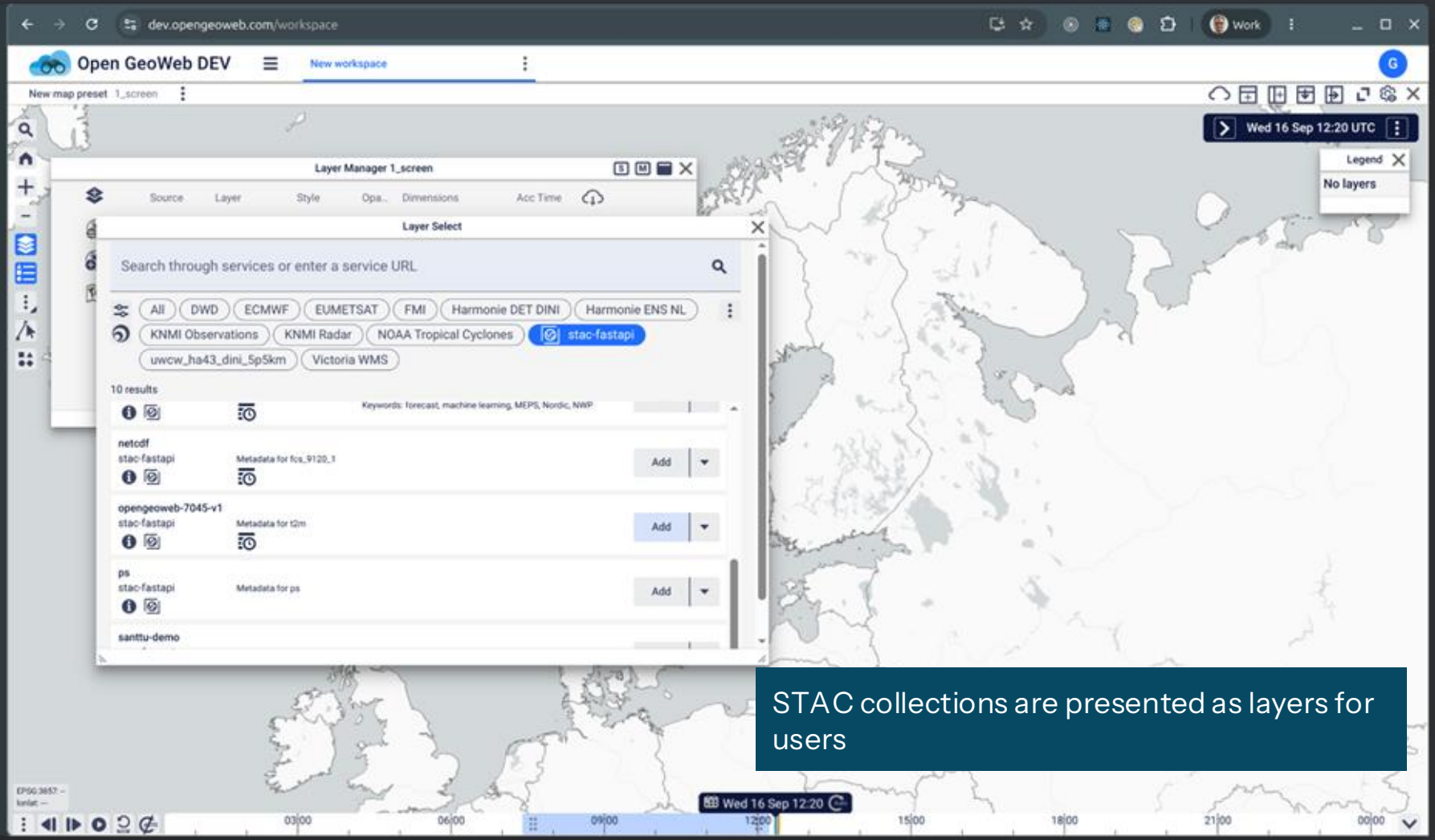
Multi-map feature displaying two parameters over multiple model runs


dev.opengeoweb.com/workspace/e1bfba90-a83b-11f1-8cab-92012fd19201
Work
Open GeoWeb DEV
Observations (EDR) (modified)
Observations (EDR) (modified)
Wed 16 Sep 07:10 UTC
11.7
1003.4
998.2
1005.1
11.2
1000.6
1004.5
9.2
1008.4
1001.4
12.5
1001.2
1010.2
999.1
1005
999.2
10.7
1012.1
999.5
1010.8
1001.9
1010.7
1002.2
14.6
8.4
9.4
5.5
7.3
16.3
16.3
17.4
15.2
Wed 16 Sep 07:10
03:00
06:00
09:00
12:00
15:00
18:00
21:00
00:00
EDR-backed feature layer (area & cube requests)

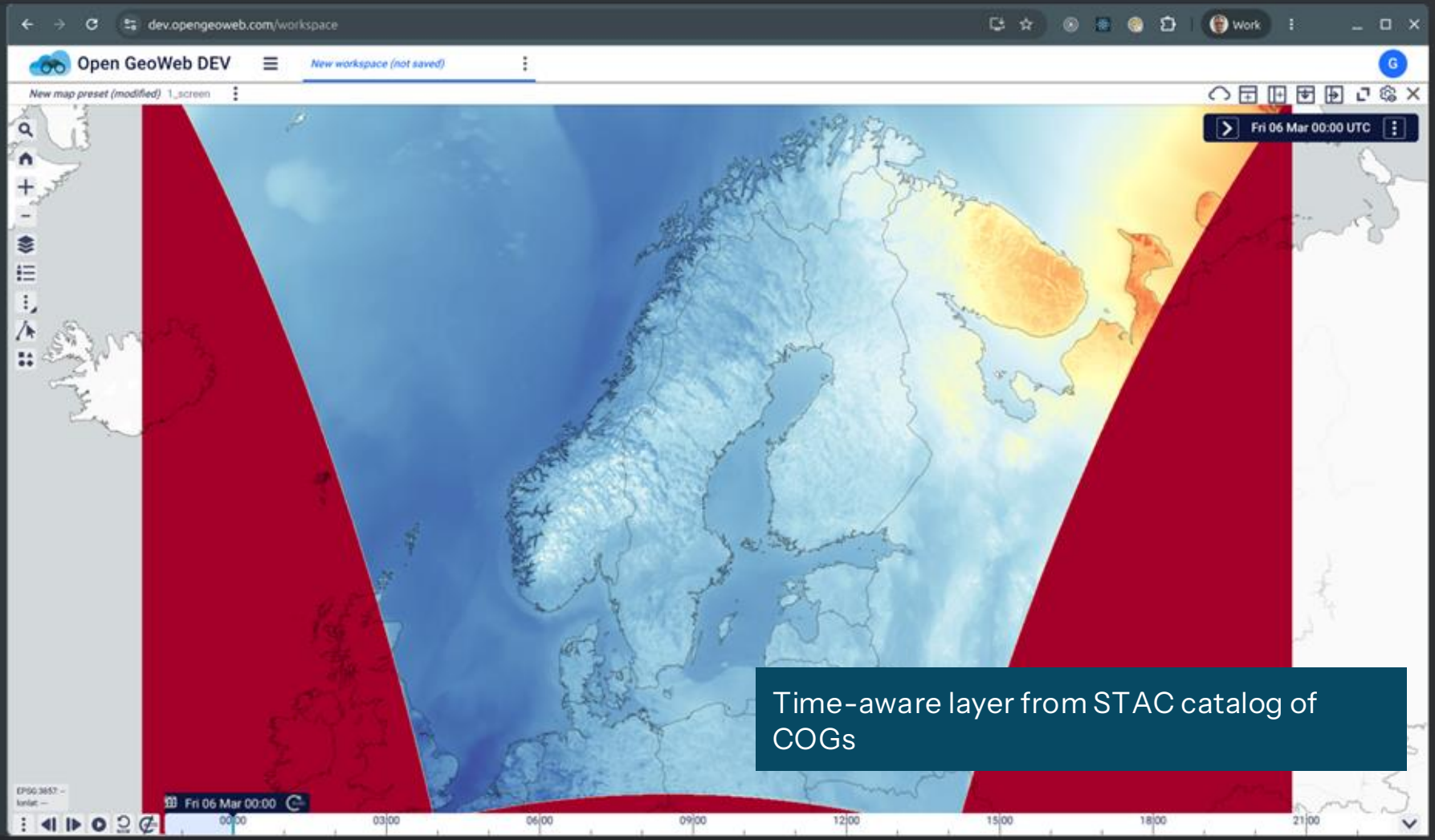

dev.opengeoweb.com/workspace/e1bfba90-a83b-11f1-8cab-92012fd19201
Work
Open GeoWeb DEV
Observations (EDR) (modified)
Observations (EDR) (modified)
Wed 16 Sep 07:10 UTC
Wed 16 Sep 07:10
EDR-backed features are clustered

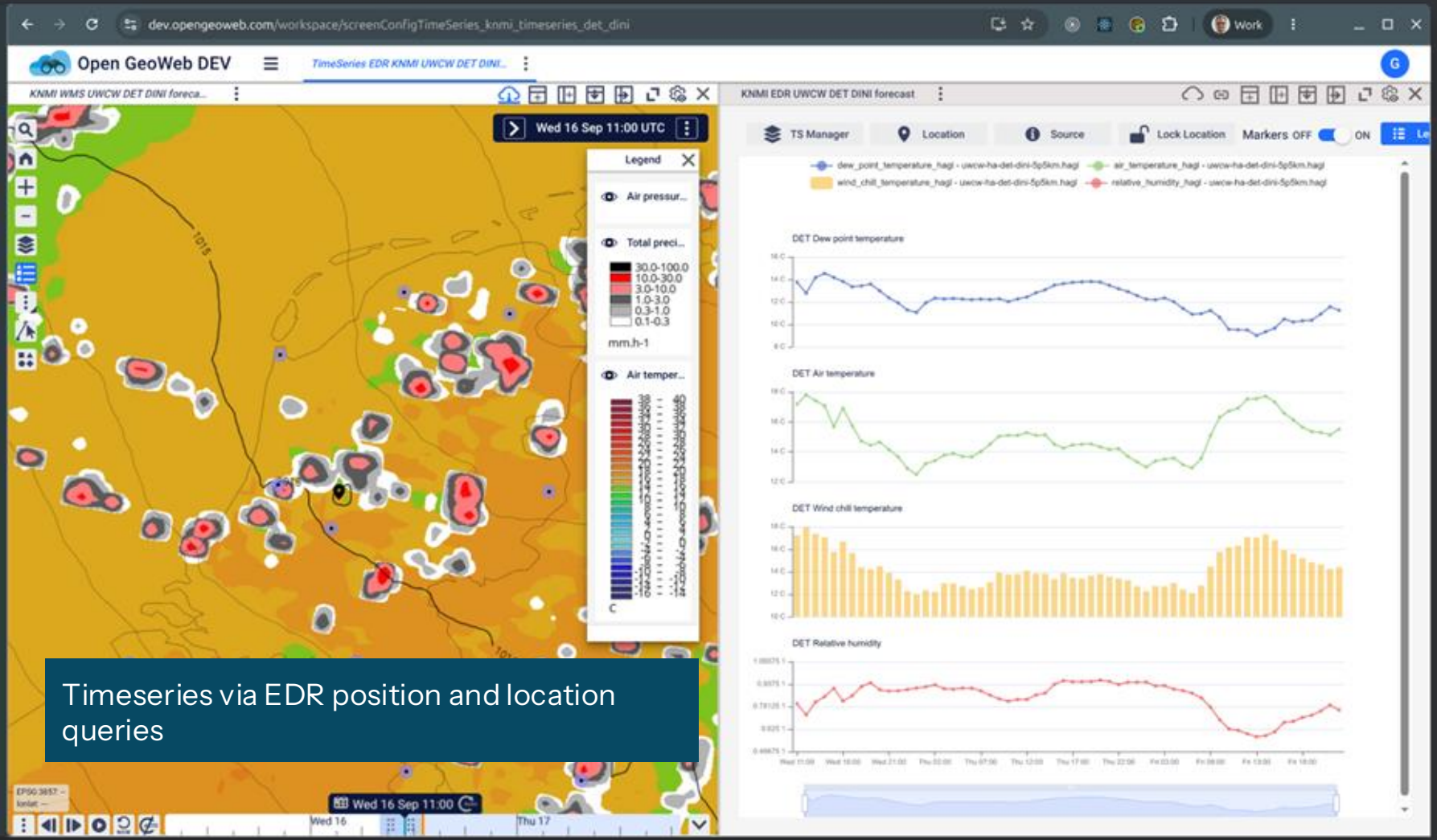


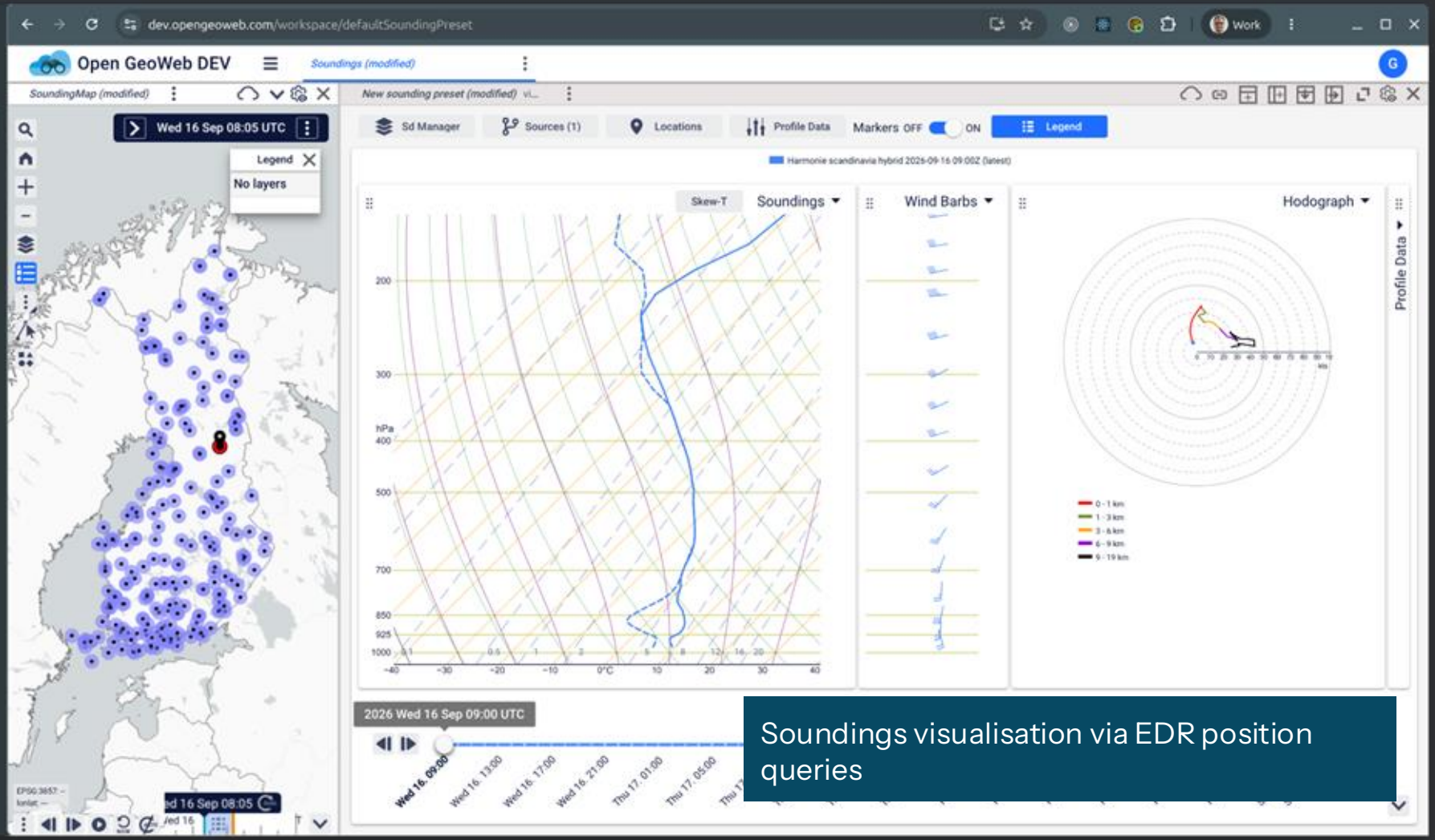
Users can connect to external data services, including STAC APIs



STAC collections are presented as layers for users


dev.opengeoweb.com/workspace
Work
Open GeoWeb DEV
New workspace (not saved)
New map preset (modified) 1_screen
Fri 06 Mar 00:00 UTC
Fri 06 Mar 00:00
00:00
03:00
06:00
09:00
12:00
15:00
18:00
21:00
Time-aware layer from STAC catalog of COGs

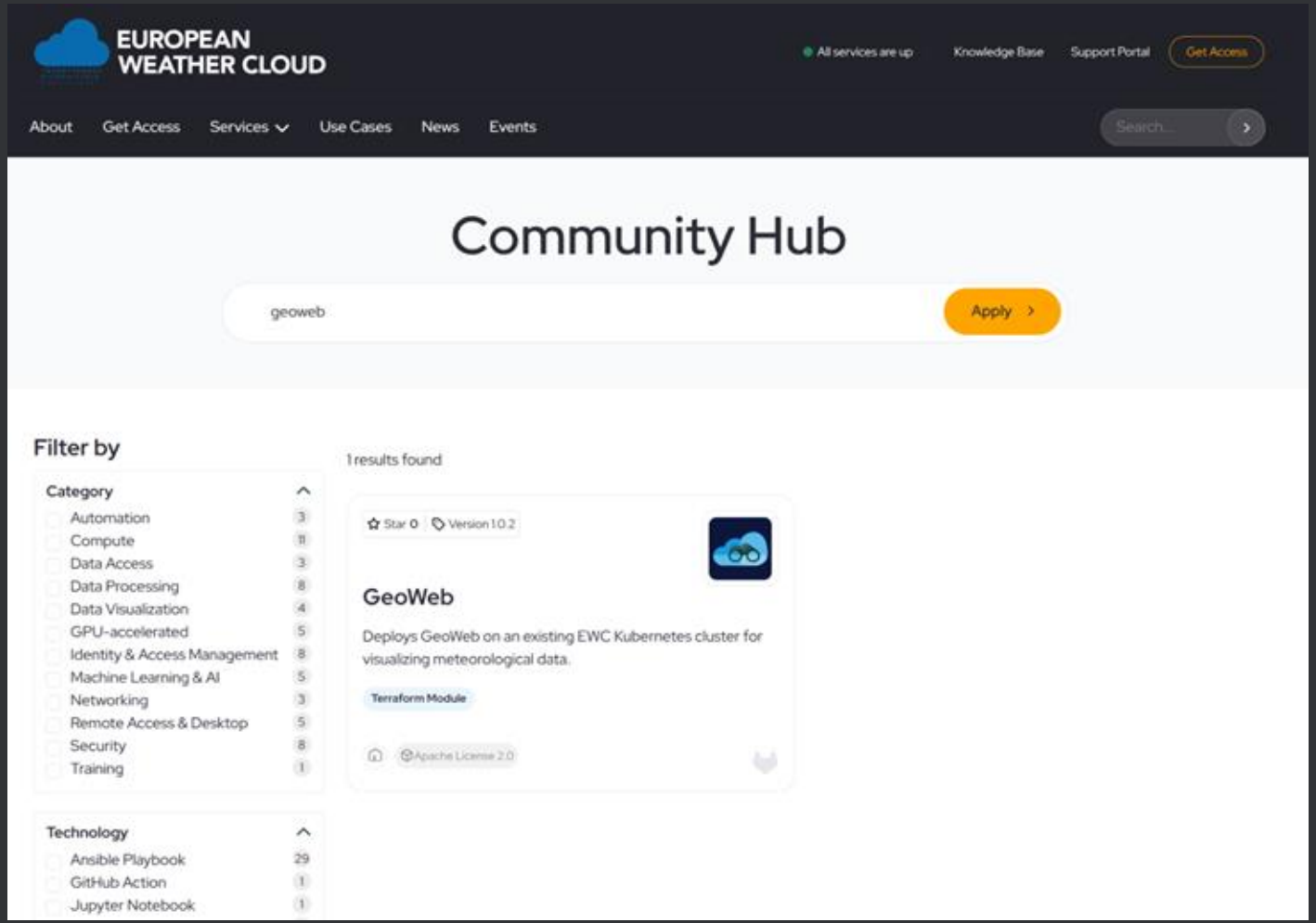

dev.opengeoweb.com/workspace/screenConfigTimeSeries_knmi_timeseries_det_dini
Open GeoWeb DEV
TimeSeries EDR KNMI UWCW DET DINI...
KNMI WMS UWCW DET DINI foreca...
Wed 16 Sep 11:00 UTC
Legend
Air pressur...
Total preci...
30.0-100.0
10.0-30.0
3.0-10.0
1.0-3.0
0.3-1.0
0.1-0.3
mm.h-1
Air temper...
C
Wed 16 Sep 11:00
Wed 16
Thu 17
KNMI EDR UWCW DET DINI forecast
TS Manager
Location
Source
Lock Location
Markers OFF
ON
dew_point_temperature_hagl - uwcw-ha-det-dini-5p5km.hagl
air_temperature_hagl - uwcw-ha-det-dini-5p5km.hagl
wind_chill_temperature_hagl - uwcw-ha-det-dini-5p5km.hagl
relative_humidity_hagl - uwcw-ha-det-dini-5p5km.hagl
DET Dew point temperature
DET Air temperature
DET Wind chill temperature
DET Relative humidity
Timeseries via EDR position and location queries

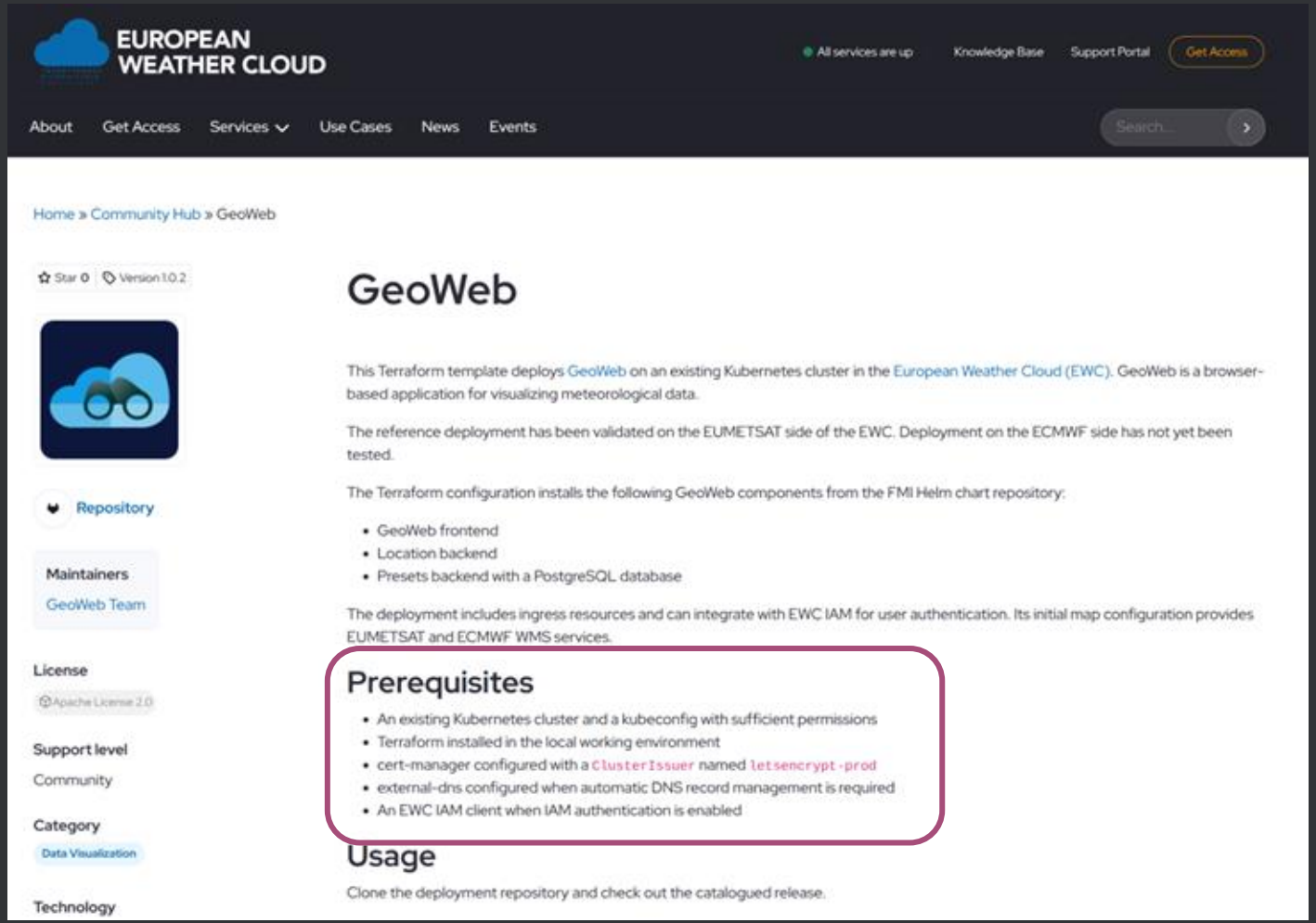

dev.opengeoweb.com/workspace/defaultSoundingPreset
Open GeoWeb DEV
Soundings (modified)
SoundingMap (modified)
New sounding preset (modified)
Wed 16 Sep 08:05 UTC
Legend
No layers
Sd Manager
Sources (1)
Locations
Profile Data
Markers OFF ON
Legend
Harmonie scandinavia hybrid 2026-09-16 09:00Z (latest)
Skew-T
Soundings
Wind Barbs
Hodograph
Profile Data
hPa
2026 Wed 16 Sep 09:00 UTC
Wed 16, 09:00
Wed 16, 13:00
Wed 16, 17:00
Wed 16, 21:00
Thu 17, 01:00
Thu 17, 05:00
Soundings visualisation via EDR position queries

EUROPEAN WEATHER CLOUD

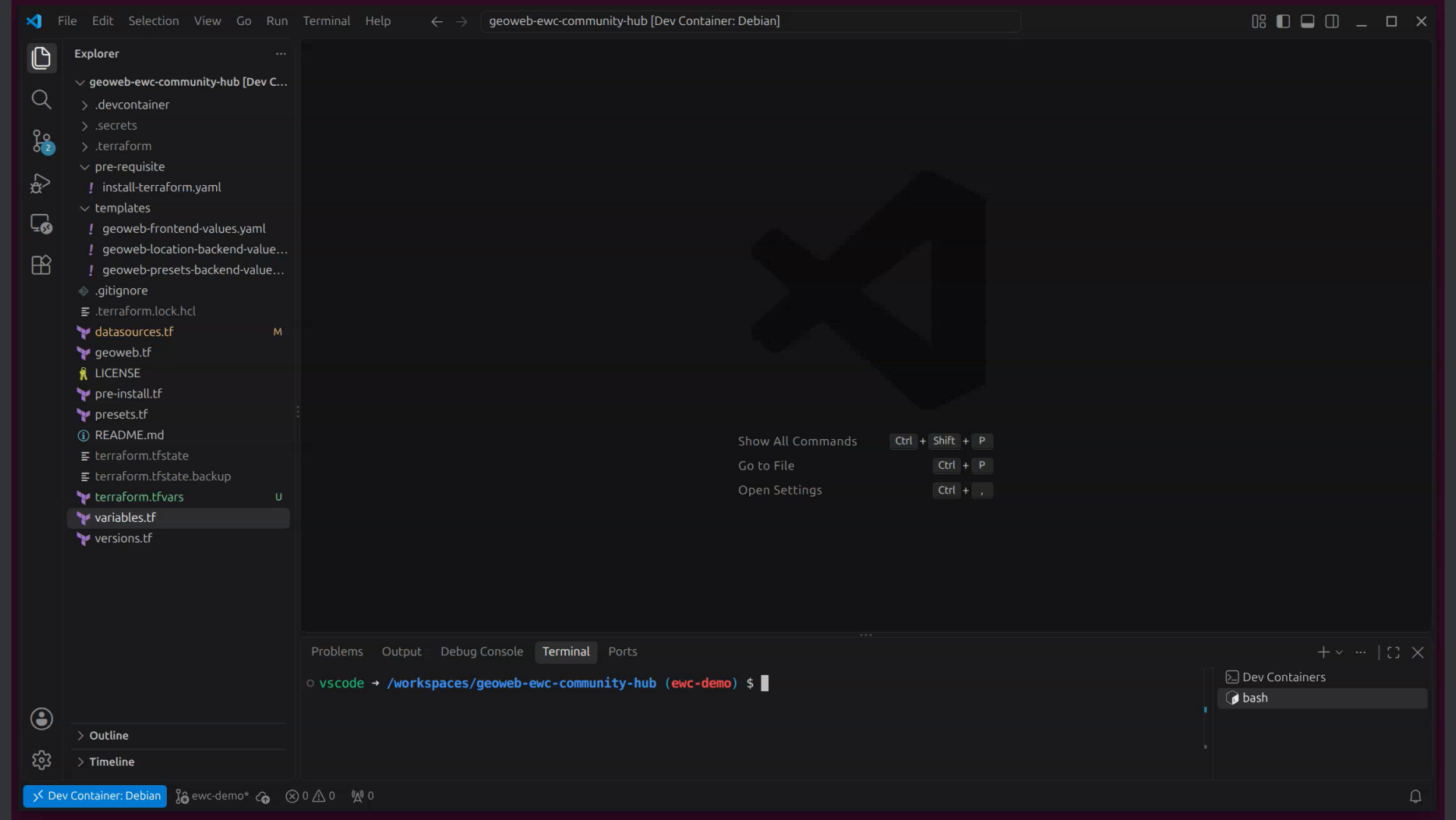
GeoWeb as an EWC Item - This provides a simple way to deploy GeoWeb as a visualisation tool for any deployment on EWC

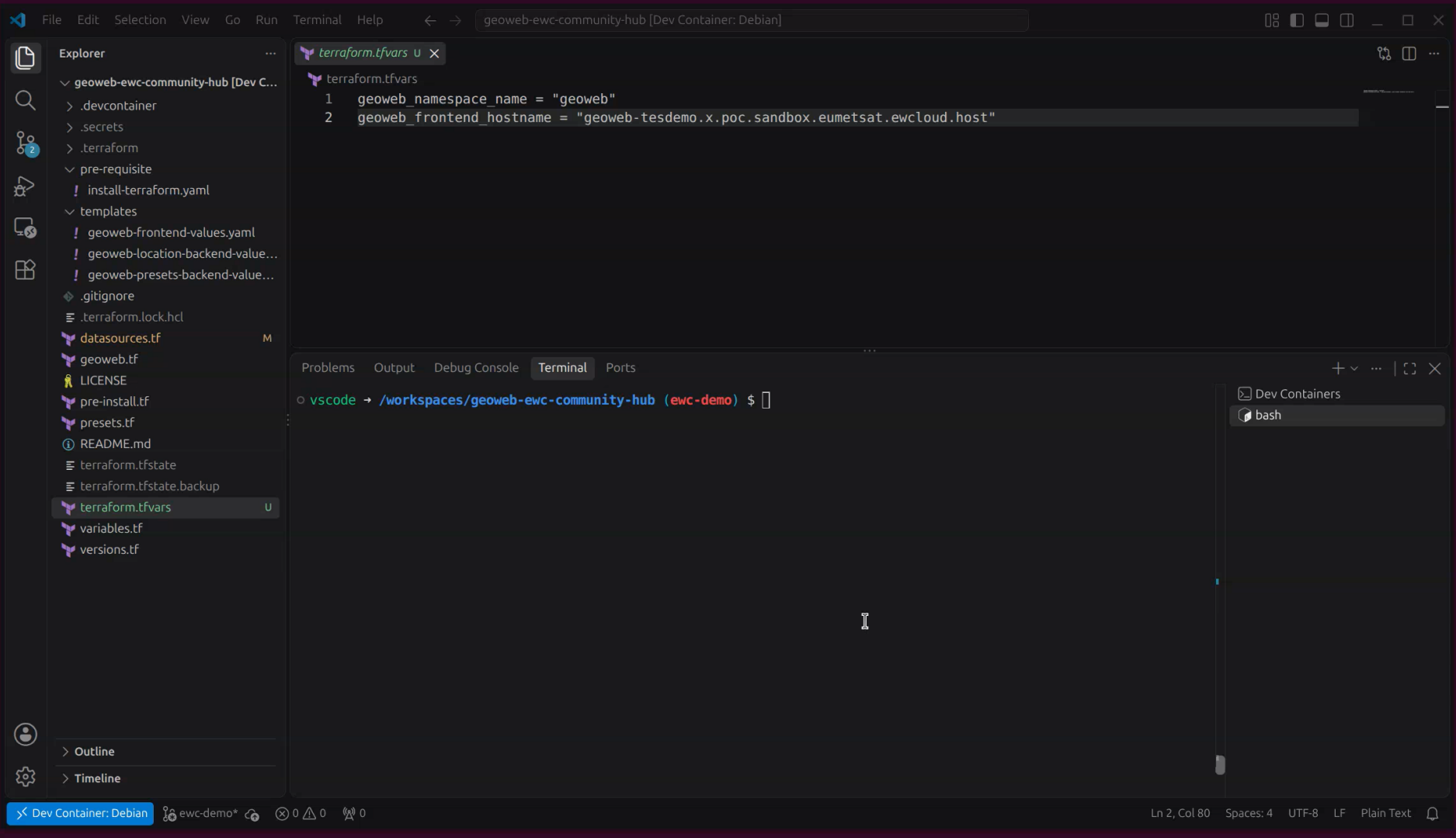
Thanks to Francesco Murdaca for helping us set this up!

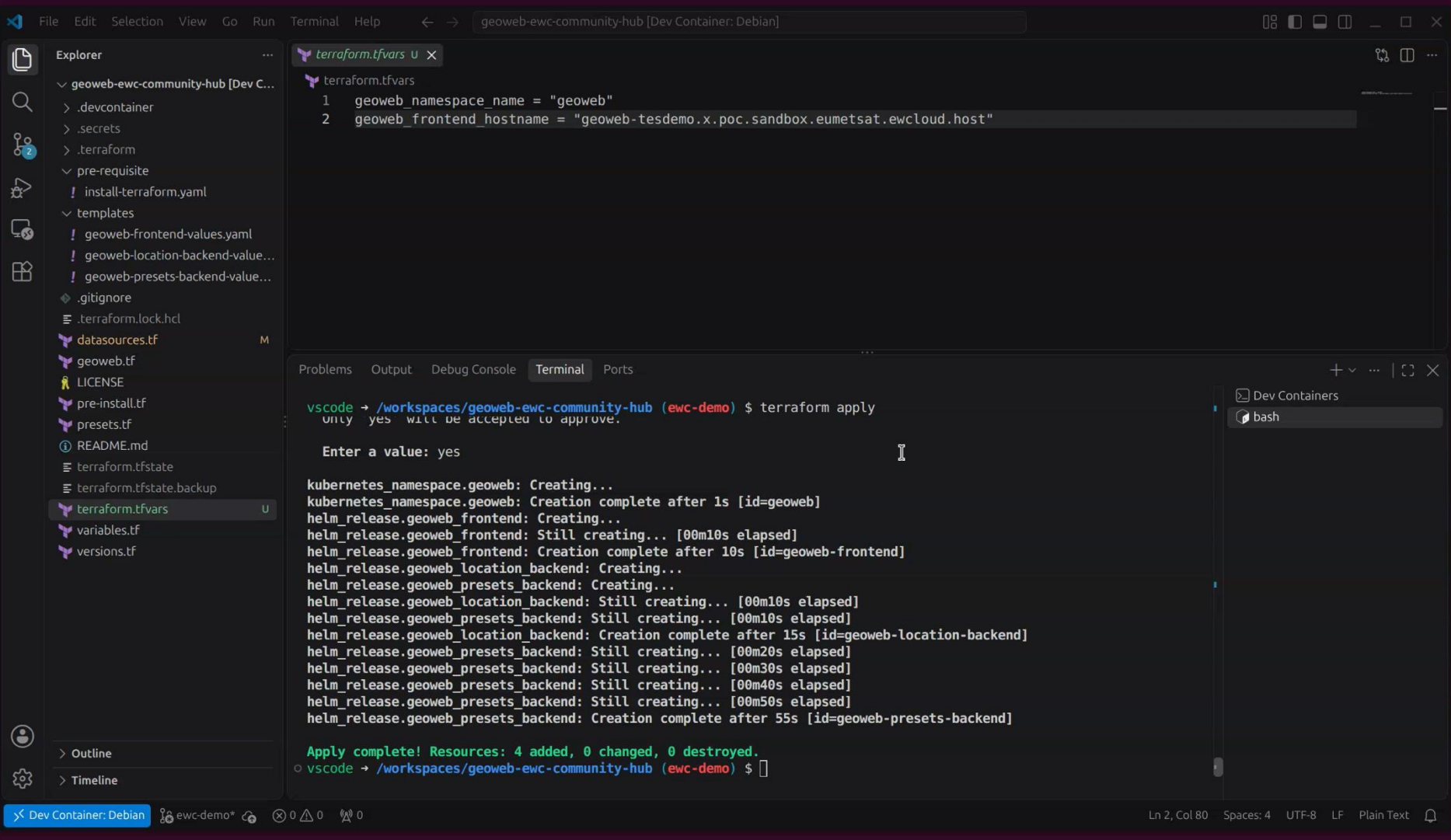

EUROPEAN WEATHER CLOUD
All services are up
Knowledge Base
Support Portal
Get Access
About
Get Access
Services
Use Cases
News
Events
Search...
Community Hub
geoweb
Apply
Filter by
Category
Automation 3
Compute 11
Data Access 3
Data Processing 8
Data Visualization 4
GPU-accelerated 5
Identity & Access Management 8
Machine Learning & AI 5
Networking 3
Remote Access & Desktop 5
Security 8
Training 1
Technology
Ansible Playbook 29
GitHub Action 1
Jupyter Notebook 1
1 results found
Star 0
Version 1.0.2
GeoWeb
Deploys GeoWeb on an existing EWC Kubernetes cluster for visualizing meteorological data.
Terraform Module
Apache License 2.0



https://www.europeanweather.cloud/community-hub/geoweb


File Edit Selection View Go Run Terminal Help
geoweb-ewc-community-hub [Dev Container: Debian]
Explorer
geoweb-ewc-community-hub [Dev C...
.devcontainer
.secrets
.terraform
pre-requisite
install-terraform.yaml
templates
geoweb-frontend-values.yaml
geoweb-location-backend-value...
geoweb-presets-backend-value...
.gitignore
.terraform.lock.hcl
datasources.tf M
geoweb.tf
LICENSE
pre-install.tf
presets.tf
README.md
terraform.tfstate
terraform.tfstate.backup
terraform.tfvars U
variables.tf
versions.tf
Outline
Timeline
Show All Commands Ctrl + Shift + P
Go to File Ctrl + P
Open Settings Ctrl + ,
Problems Output Debug Console Terminal Ports
vscode → /workspaces/geoweb-ewc-community-hub (ewc-demo) $
Dev Containers
bash
Dev Container: Debian
ewc-demo*
0 0
0


File Edit Selection View Go Run Terminal Help
geoweb-ewc-community-hub [Dev Container: Debian]
Explorer
geoweb-ewc-community-hub [Dev C...
.devcontainer
.secrets
.terraform
pre-requisite
install-terraform.yaml
templates
geoweb-frontend-values.yaml
geoweb-location-backend-value...
geoweb-presets-backend-value...
.gitignore
.terraform.lock.hcl
datasources.tf M
geoweb.tf
LICENSE
pre-install.tf
presets.tf
README.md
terraform.tfstate
terraform.tfstate.backup
terraform.tfvars U
variables.tf
versions.tf
Outline
Timeline
terraform.tfvars U
terraform.tfvars
1 geoweb_namespace_name = "geoweb"
2 geoweb_frontend_hostname = "geoweb-tesdemo.x.poc.sandbox.eumetsat.ewcloud.host"
Problems Output Debug Console Terminal Ports
vscode → /workspaces/geoweb-ewc-community-hub (ewc-demo) $
Dev Containers
bash
Dev Container: Debian
ewc-demo*
0 0
0
Ln 2, Col 80
Spaces: 4
UTF-8
LF
Plain Text


File Edit Selection View Go Run Terminal Help
geoweb-ewc-community-hub [Dev Container: Debian]
Explorer
geoweb-ewc-community-hub [Dev C...
.devcontainer
.secrets
.terraform
pre-requisite
install-terraform.yaml
templates
geoweb-frontend-values.yaml
geoweb-location-backend-value...
geoweb-presets-backend-value...
.gitignore
.terraform.lock.hcl
datasources.tf M
geoweb.tf
LICENSE
pre-install.tf
presets.tf
README.md
terraform.tfstate
terraform.tfstate.backup
terraform.tfvars U
variables.tf
versions.tf
Outline
Timeline
terraform.tfvars U
terraform.tfvars
1 geoweb_namespace_name = "geoweb"
2 geoweb_frontend_hostname = "geoweb-tesdemo.x.poc.sandbox.eumetsat.ewcloud.host"
Problems Output Debug Console Terminal Ports
vscode → /workspaces/geoweb-ewc-community-hub (ewc-demo) $ terraform apply
Only 'yes' will be accepted to approve.
Enter a value: yes
kubernetes_namespace.geoweb: Creating...
kubernetes_namespace.geoweb: Creation complete after 1s [id=geoweb]
helm_release.geoweb_frontend: Creating...
helm_release.geoweb_frontend: Still creating... [00m10s elapsed]
helm_release.geoweb_frontend: Creation complete after 10s [id=geoweb-frontend]
helm_release.geoweb_location_backend: Creating...
helm_release.geoweb_presets_backend: Creating...
helm_release.geoweb_location_backend: Still creating... [00m10s elapsed]
helm_release.geoweb_presets_backend: Still creating... [00m10s elapsed]
helm_release.geoweb_location_backend: Creation complete after 15s [id=geoweb-location-backend]
helm_release.geoweb_presets_backend: Still creating... [00m20s elapsed]
helm_release.geoweb_presets_backend: Still creating... [00m30s elapsed]
helm_release.geoweb_presets_backend: Still creating... [00m40s elapsed]
helm_release.geoweb_presets_backend: Still creating... [00m50s elapsed]
helm_release.geoweb_presets_backend: Creation complete after 55s [id=geoweb-presets-backend]
Apply complete! Resources: 4 added, 0 changed, 0 destroyed.
vscode → /workspaces/geoweb-ewc-community-hub (ewc-demo) $
Dev Containers
bash
Dev Container: Debian
ewc-demo*
Ln 2, Col 80
Spaces: 4
UTF-8
LF
Plain Text

GeoWeb on EWC

The terraform setup allows users straight-forward deployment of GeoWeb on a Kubernetes cluster:

- Frontend application
- Preset & Location backends
- Configure: DNS name
- Configure: Which data sources (WMS, EDR, STAC) you wish to use by default
- Optional: Set up authentication using OAuth

Not all GeoWeb features are included in the setup yet (for example product editors)
We are happy to extend the capabilities of the setup if you have further requirements!

PS. It has not been tested yet on the ECMWF cloud

What we ship

Code repository on GitLab and frontend packages on npmjs (releases and nightly builds)

Docker Containers on GitLab: frontend, backends

EWC terraform item on GitLab geoweb-ewc-community-hub

- Based on Helm charts on GitHub: fmidev/helm-charts

Live deployments:

https://dev.opengeoweb.com/ - up-to-date with master
https://acc.opengeoweb.com/ - staging every 2 weeks
https://opengeoweb.com/ - stable release every 4 weeks

Welcome aboard!

Everyone is welcome: If you're interested, try GeoWeb on EWC!

The software is open source and you are welcome to download, use and participate: file feature requests, bug reports, merge requests, email me …

Thank you!