

# UN Smart Maps

An open initiative for data fusion

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- Information and Communications Technology (ICT)
- Geospatial Information Authority of Japan
- IPI, Leibniz University of Hannover
- United Nations Geospatial Information Section
- Japan International Cooperation Agency

# Recent projects with JICA



# Open Source Open Data

## UN Open GIS (Geospatial Information Systems) Initiative

***Partners: Finland, Italy, Japan, Republic of Korea, United States of America***

***Status: Ongoing***

The UN Open GIS Initiative, established in 2016, is an ongoing partnership initiative and supported by Member States, International Organizations including UN Agencies, Academia, NGOs, and the Private Sector.

The aim of UN Open GIS is the creation of an extended spatial data infrastructure by utilizing open source GIS solutions that meet the operational requirements of the United Nations (UN Secretariat including UN field missions and regional commissions). The initiative also reaches to UN agencies and operating partners, and to developing countries.

The UN Open GIS Initiative intends to provide a sustainable, hybrid GIS platform (integrating open source software GIS technology with the existing proprietary GIS platform) to effectively and efficiently support enhanced Situational Awareness and to inform decision-making. This will fulfill UN core mandates that refers to or depends on the following: geospatial information, the saving of lives and the support to emergency operations, and the enablement of cost-effective operations.

Various open source GIS solutions have been explored/assessed in the UN field operational environment, with findings of positive outcomes to move forward from the existing proprietary GIS platform toward the hybrid GIS platform. This is particularly on mobile GIS solutions (QField, KoBoToolbox, Geopaparazzi), desktop GIS solution (QGIS), OpenDroneMap, Cloud Free Satellite Imagery, and Hybrid GIS infrastructure.

To learn more, visit <https://www.un.org/geospatial>

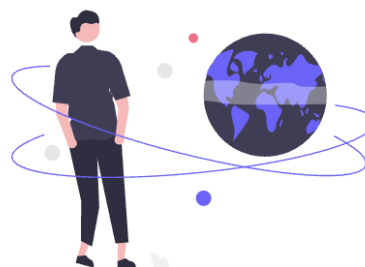
# UN Smart Maps

Keep web maps open for a better world

[Join UN Smart Maps](#)[See upcoming events](#)

## Open License

UN Smart Maps is committed to sharing Open Source Software and Open Data.



## Open Practice

UN Smart Maps is a Community of Practice. We share best practices and lessons learned.



## Open Community

Anyone can join UN Smart Maps. We welcome contributions from anyone.

# Application of modern **web map** technologies for informed decision

Keep web maps **open** for  
a better world

# Test new technologies for future geospatial applications

# Generative AI Portable Web

Configuration – serving, visualization

Query - retrieval, analysis

Find components  K

COMPONENTS 

Datasets

ArmedConflict

Preview

DEM1A

GEL

GoogleOpenBuildings

KonturPopulation

OpenCellId

OvertureMaps

Rwanda10

Preview

Terrain22

VientianeLanduse

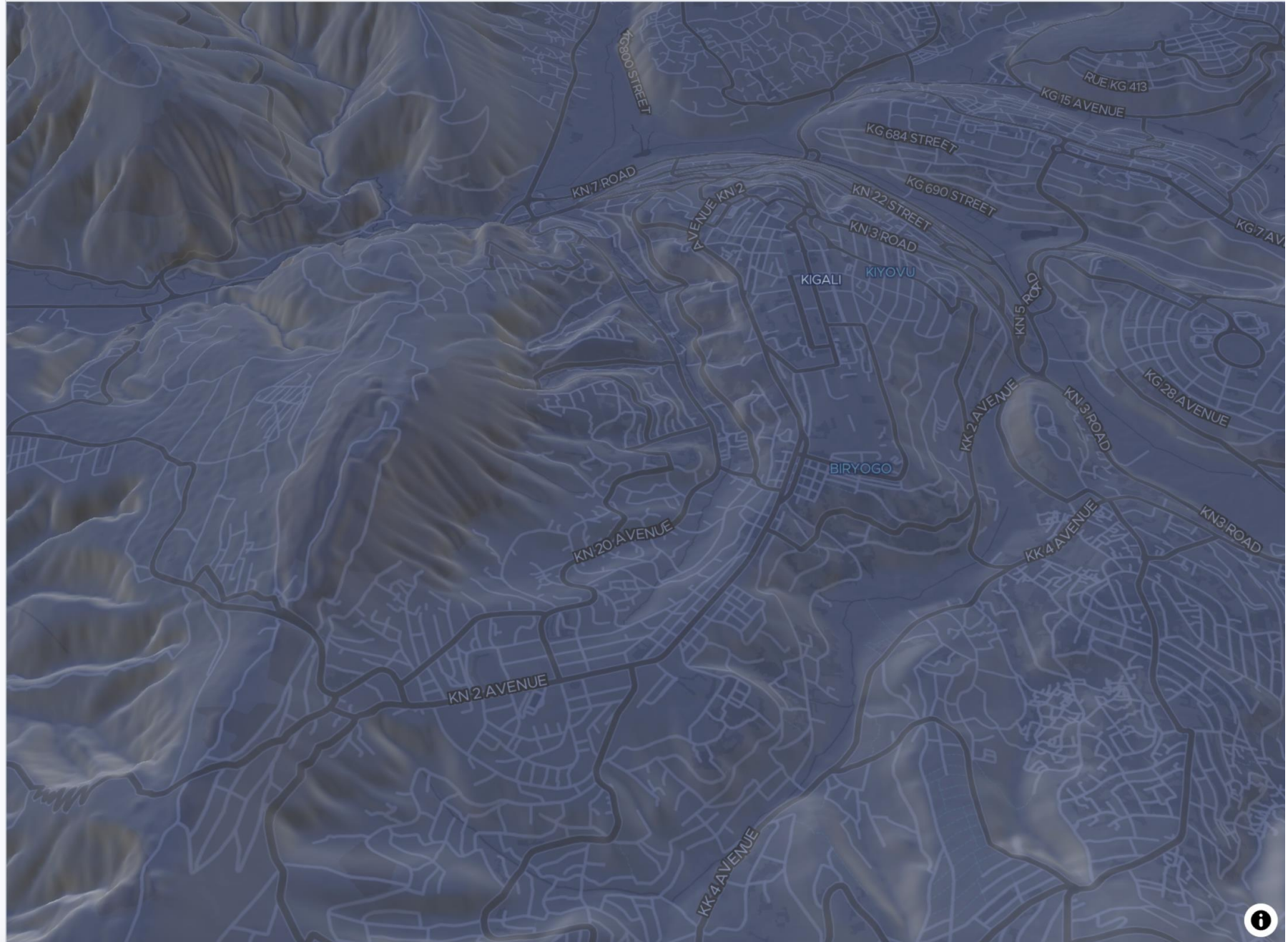
Maps

EXAMPLES 

Combined

Stories

Visualization





Q Find components ⌘ K

COMPONENTS

Datasets

> ArmedConflict

> DEM1A

Preview

> GEL

> GoogleOpenBuildings

> KonturPopulation

> OpenCellId

> OvertureMaps

> Rwanda10

> Terrain22

> VientianeLanduse

Maps

> OpenStreetMap

> Satellitemapery

> UNClearMapDarkRaster

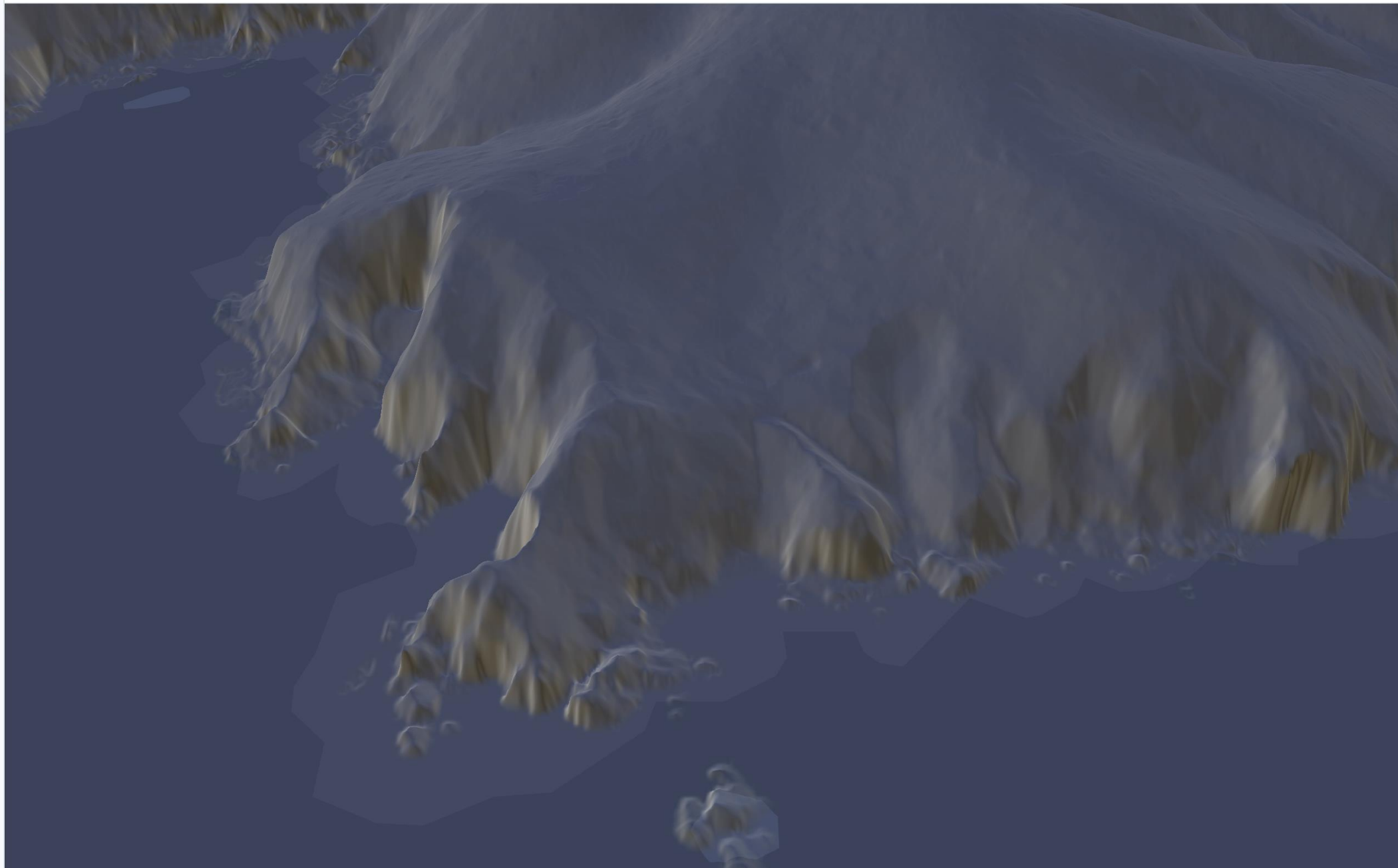
> UNClearMapRaster

EXAMPLES

> Combined

> Stories

> Visualization





You are viewing `Copilot Workspace` in read-only mode. [Sign in again](#) for full access



UNOpenGIS / foil4g #63 main Auto saving...



Create pull request



lib/data/optgeo.github.io/virgo-data/transmission\_line\_v1.yaml



- ✓ Create a new YAML file for the transmission line data
- ✓ Add a `data_id` field with a unique identifier for the data
- ✓ Add a `license` field with the value "unknown" and a note about the open data intention
- ✓ Add an `attributions` field with the Vientiane Integrated Urban Information GIS-based Opendata Platform and its URL
- ✓ Add a `description` field with a brief description of the transmission line data
- ✓ Add a `data_format` field with the value "shapefile"
- ✓ Add a `file_format` field with the value "shp"
- ✓ Add a `file_size` field with the value "unknown"
- ✓ Add a `url` field with the URL of the shapefile



Files changed 1



Uncommitted changes



lib/data/optgeo.github.io/virgo-data/transmission\_line\_v1 ?



```
1 data_id: optgeo_transmission_line_v1
2 license: unknown
3 attributions:
4   - Vientiane Integrated Urban Information GIS-based Opendata Platform
5   - https://virgo.mpwt.gov.la/disclaimer/#/
6 description: Transmission line data for Vientiane, Lao P. D. R.
7 data_format: shapefile
8 file_format: shp
9 file_size: unknown
10 url: https://optgeo.github.io/virgo-data/transmission_line_v1.shp
11
```



Revise...



# FOIL4G: Free and Open Information Library for Geospatial

## Concept

We incorporate Benjamin Franklin's library concept into the idea of the Free and Open Information Library for Geospatial (FOIL4G):

"Since our books were often referred to in our disquisitions upon the queries, it might be convenient to have them all together where we meet, so that they might be consulted when needed. Additionally, by pooling our books into a common library, we would, while we liked to keep them together, have the advantage of using the books of all the other members, which would be nearly as beneficial as if each owned the whole."

This quote is highly relevant to emphasize the philosophy behind FOIL4G. FOIL4G aims to create an open library of geospatial information, allowing all members to freely access and collaboratively utilize the data. By doing so, it leverages individual resources to enhance the collective knowledge and capabilities of the entire community.

Specifically, FOIL4G can incorporate the following elements:

1. **Aggregation of Shared Resources:** Collect smart maps, geospatial data, relevant documents, and more in one place where everyone can access them.
2. **Collaborative Work and Learning:** Facilitate discussions among members, enabling them to consult necessary information on the spot for effective decision-making and problem-solving.
3. **Expansion of Knowledge:** By utilizing the shared library, each member can benefit from the knowledge and resources of others, thus enhancing their own capabilities.

Configuration – serving, visualization

Query - retrieval, analysis

Sandboxed DB on browsers for Generative AI

DuckDB-Wasm

DuckDB-Spatial



DuckDB-Wasm has initialized.

Data loaded.

```
LOAD json;  
LOAD spatial;  
CREATE TABLE countries AS SELECT * FROM ST_Read('https://yuiseki.github.io/study-duckdb-wasm-spatial/ne_110m_admin_0_countries.json');
```

## Number of countries (Most simple query for DuckDB-Wasm)

```
SELECT COUNT(*) FROM countries;
```

177

## Largest countries (Using ST\_Area, most simple Spatial Function from DuckDB-Spatial, on DuckDB-Wasm)

```
LOAD json;  
LOAD spatial;  
SELECT name as name, ST_Area(geom) as area FROM countries ORDER BY area DESC LIMIT 5;
```

Antarctica: 6028.836194274539

Russia: 2935.205205440512

Canada: 1712.995227649378

# Generative AI Adaptivity

# Portable Web Portability

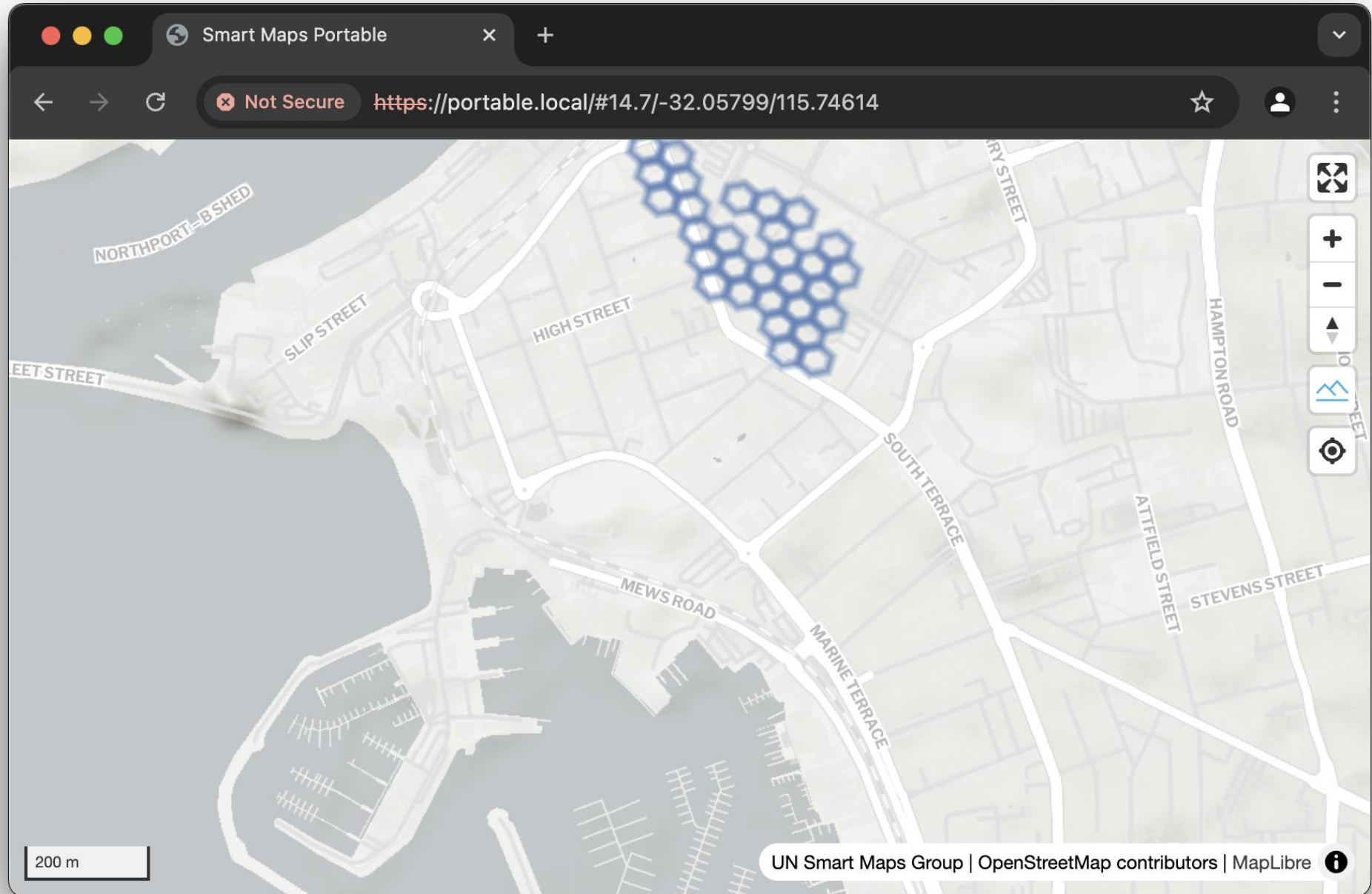
Dataset in a single file

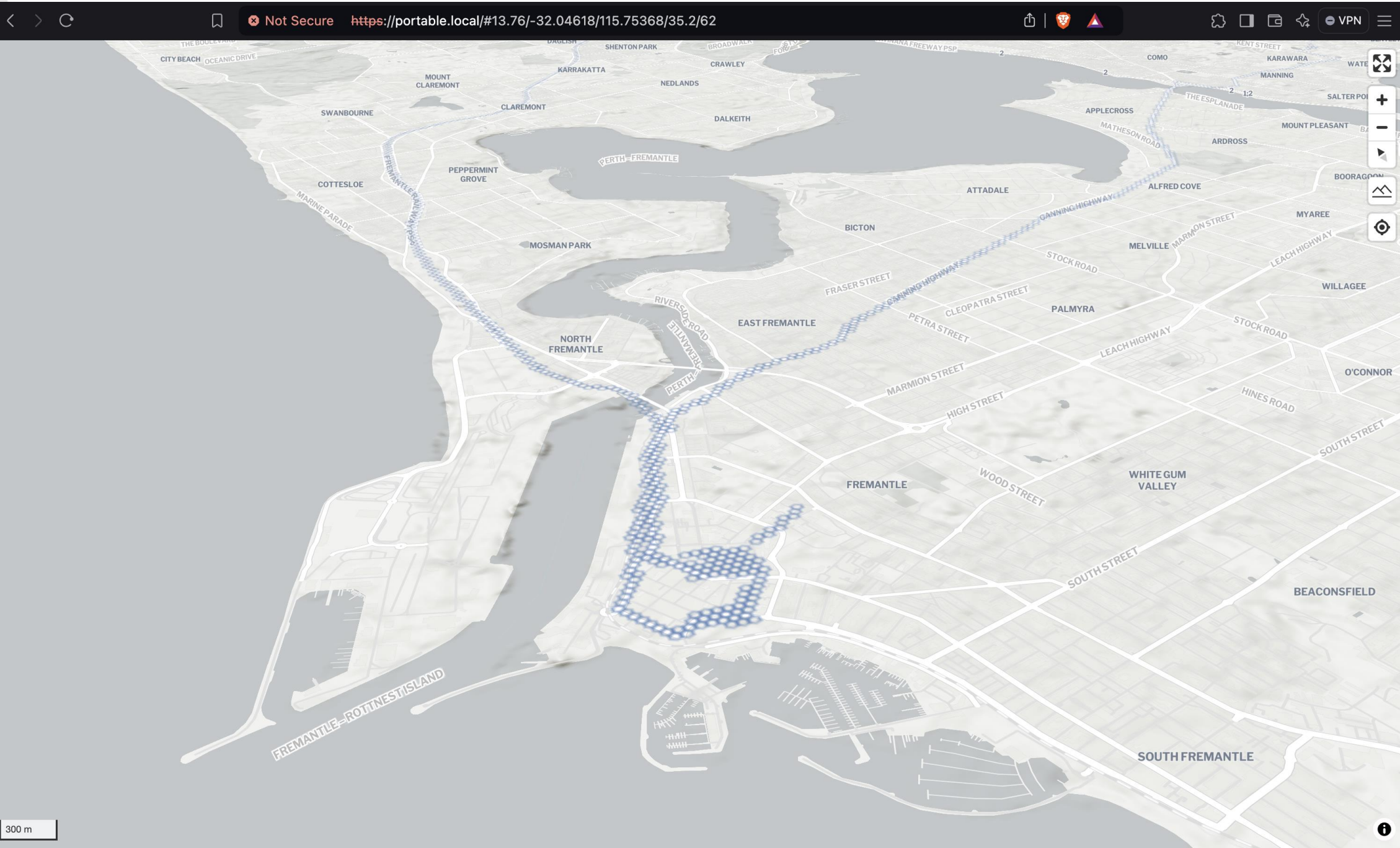
# Cloud-native

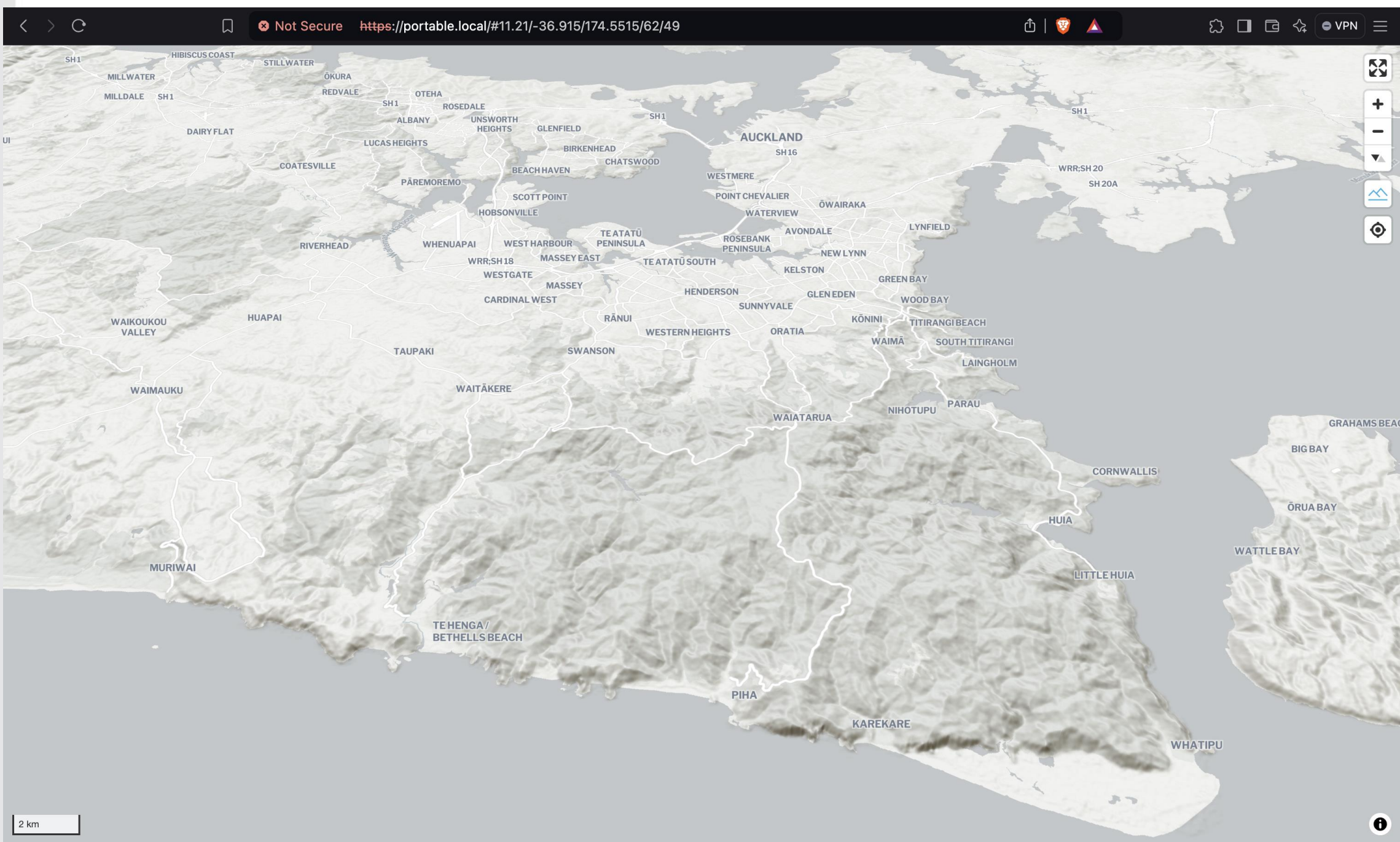
On-premise Server  
Object Storage  
Single-board PC  
InterPlanetary File System

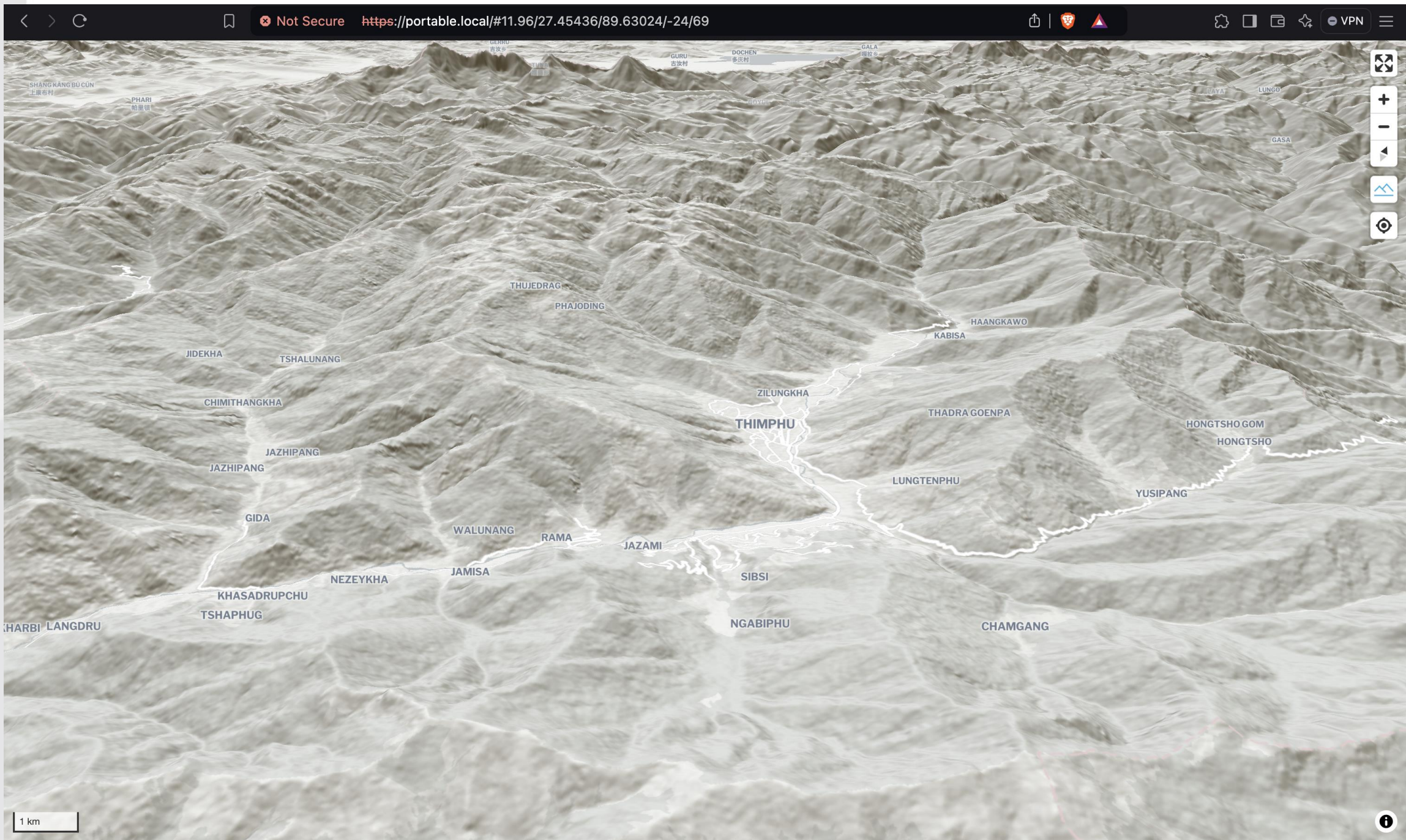
1. Raspberry Pi 4B
2. USB **UPS** (10,000 mAh)
3. USB **SSD** (2 TB)
4. GNSS antenna
5. USB power bank (20,000 mAh)











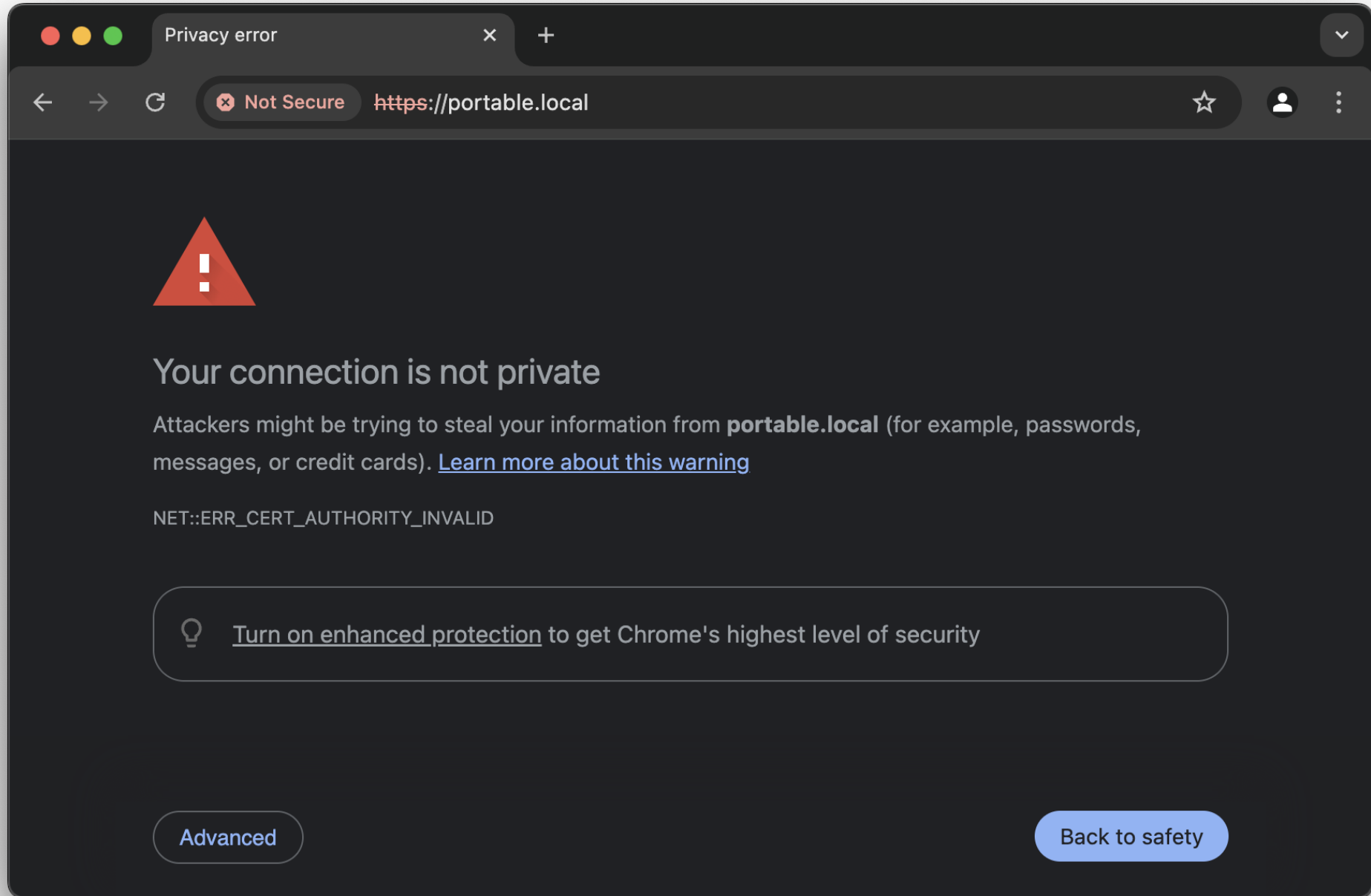


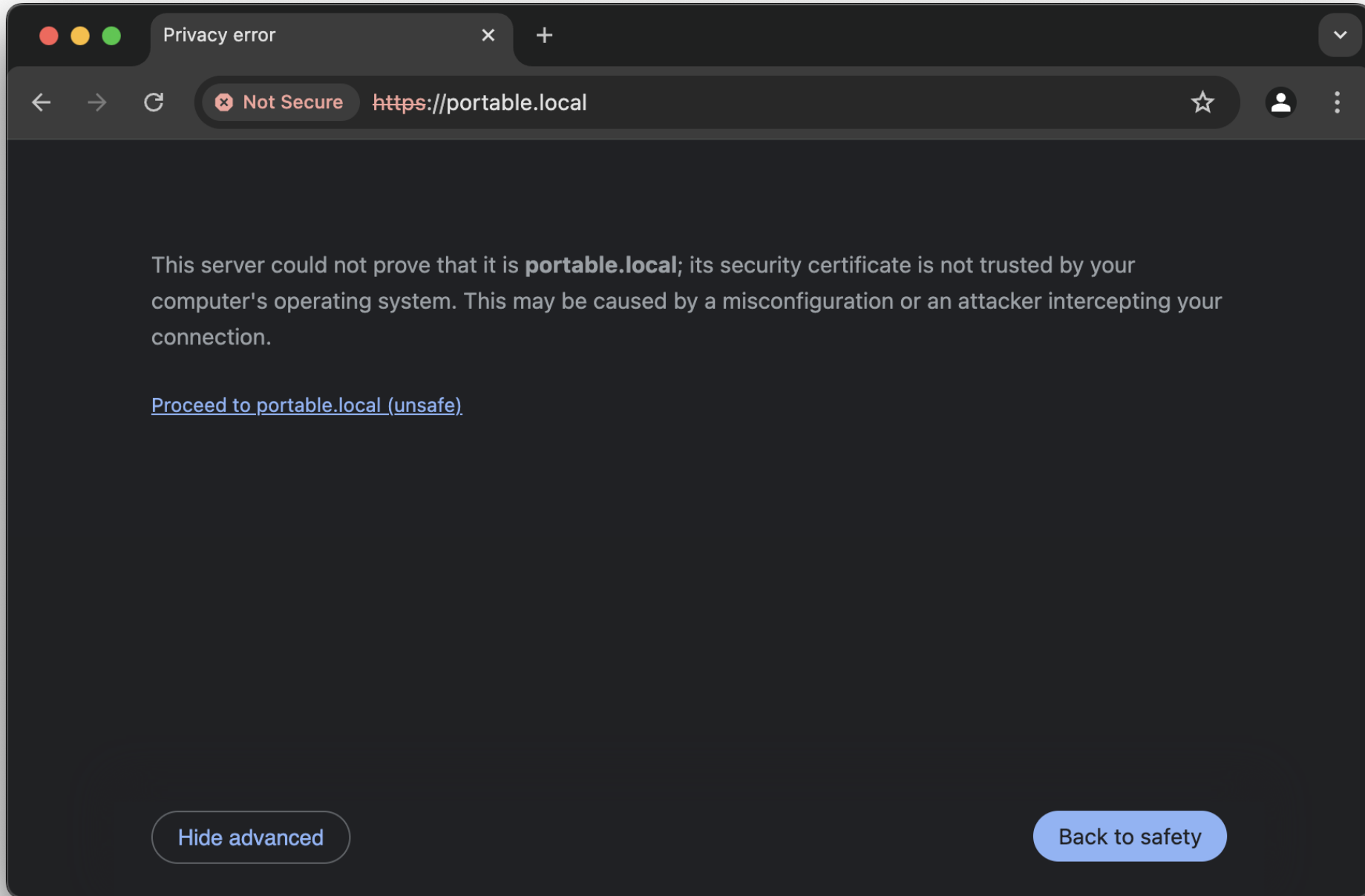
## 1. Connect WiFi

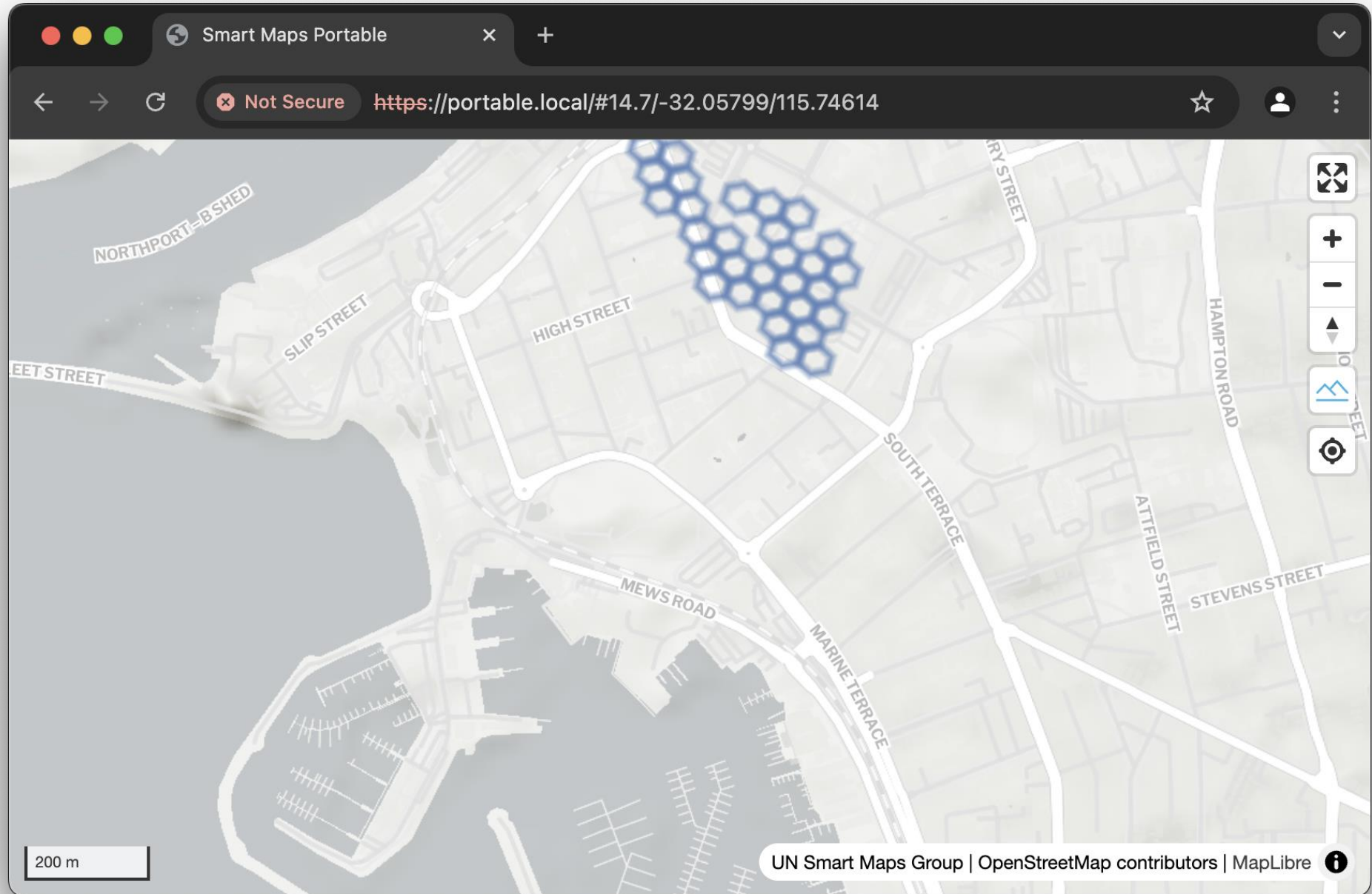
- SSID: smartmapsportable
- Password: smartmapsportable

## 2. Open

`https://portable.local`







- MapLibre GL JS w/ PMTiles.js
- Ctrl-drag for 3D view
- Self-hosted **PMTiles** data
  - OpenStreetMap **vector tiles** (69 GB)
  - NASADEM **terrain tiles** (183 GB)
  - LiDAR **3D Tiles** (414 GB, Nagasaki, Japan)
- GNSS tracks in **h3j**

On-premise Server  
Object Storage  
Single-board PC  
InterPlanetary File System

# Open Community of Practice currently working on Generative AI and Portable Web

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 イベント

 チャンネル&ロール

 メンバー

GETTING STARTED

 rules-and-guidelines

 announcements

# introductions


SOCIAL

# general

# photos

# mapping

# events

 ? help

# administrators

# off-topic

PROJECTS

 grf2023

 voting

 Hidenori - ...  
オンライン


# #introductionsへようこそ！

これはチャンネル「#introductions」の始まりです。

[チャンネルの編集](#)

2023年12月2日

16:04 **smellman** Hi, this is Taro Matsuzawa.

Lead of UN Smart Maps, and director of both OSGeo.JP and OpenStreetMap Foundation Japan.

 1  1 

2023年12月4日

22:51 **Hidenori - hfu** Hi, this is Hidenori. In addition to managing and leading the UN Smart Maps Group, I am implementing and leading the UN Smart Maps Bazaar project. I am working for Geospatial Information Authority of Japan.

 1  1 

23:43 **asahina** Hi! This is Hinako Iseki. Please call me Asahina.

I was invited by Albert to participate in this discord.

I am a board director of OSGeo.JP.

 2  1 

2023年12月5日



#introductionsへメッセージを送信





UNOpenGIS / 7

Type / to search



&lt;&gt; Code

Issues 34

Pull requests

Discussions

Actions

Projects 1

Wiki

Security

Insights



Filters ▾

is:issue is:open

Labels 13

Milestones 6

New issue

<input type="checkbox"/>	<input checked="" type="radio"/> 34 Open ✓ 547 Closed	Author ▾	Label ▾	Projects ▾	Milestones ▾	Assignee ▾	Sort ▾
<input type="checkbox"/>	<input checked="" type="radio"/> <b>2024-10-23T11:25/45: FOSS4G Perth 2024</b> event information #604 opened 31 minutes ago by hfu						
<input type="checkbox"/>	<input checked="" type="radio"/> <b>OSC2024 Tokyo/Fall</b> priority/SHOULD #603 opened 4 days ago by yuiseki						3
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Hiatus for UN Smart Maps Pacific</b> priority/SHOULD #602 opened 4 days ago by albertkun 1 of 2 tasks						2
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Remote sensing × Computer vision meta survey</b> information waiting/assign waiting/triage #600 opened last week by yuiseki						1
<input type="checkbox"/>	<input checked="" type="radio"/> <b>DuckDB-Wasm + DuckDB-Spatial = Webブラウザ上で完結する地理空間情報分析</b> priority/SHOULD #599 opened last week by yuiseki						1
<input type="checkbox"/>	<input checked="" type="radio"/> <b>[INFO] CNG が Foundation から Forum になった</b> information someday/maybe #596 opened last week by hfu						
<input type="checkbox"/>	<input checked="" type="radio"/> <b>2024-10-24T09:15/10:00 ISPRS TC4 Symposium 基調講演準備</b> event priority/MUST #594 opened 2 weeks ago by hfu 1 task done						6

Keep web maps **open**.  
**Test** new technologies.