

Smart Maps

for the prosperity in the future

Hidenori Fujimura

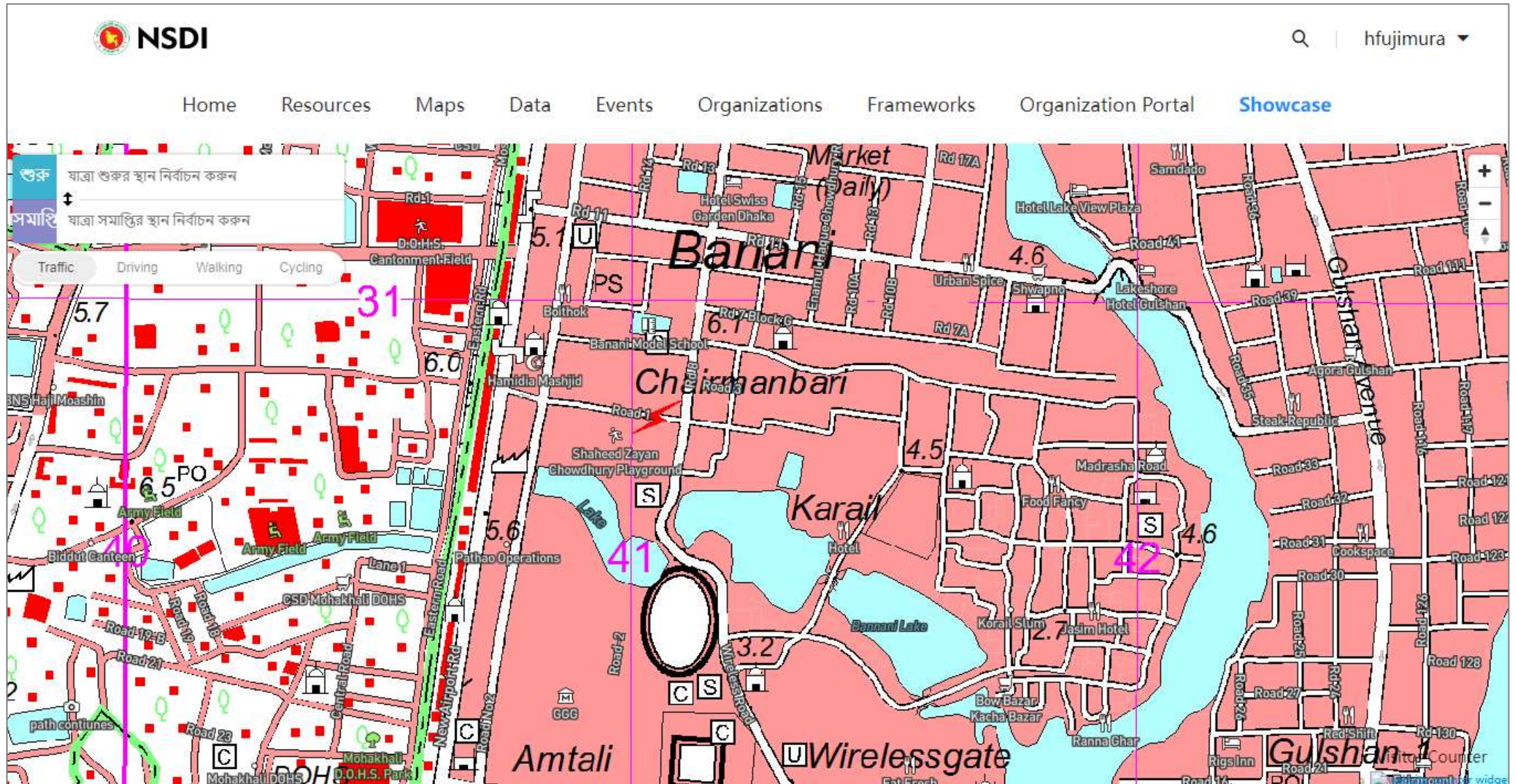
Senior Advisor on Geospatial Information,
Japan International Cooperation Agency (JICA)

Lead, UN Smart Maps Group, UN Open GIS Initiative

Web Map engineer serving the Government of Japan.

- 2004: Maintained the **Digital Japan Web System**
- 2014: Directed the launch of **GSI Maps**
- 2017-2019: UN mission GIS support – currently **UN Maps**
- 2020: Established the **UN Smart Maps Group**
- 2024: **JICA Senior Advisor** for Geospatial Information

“All maps should be on the **web technology**, because the web technology is ubiquitous.”

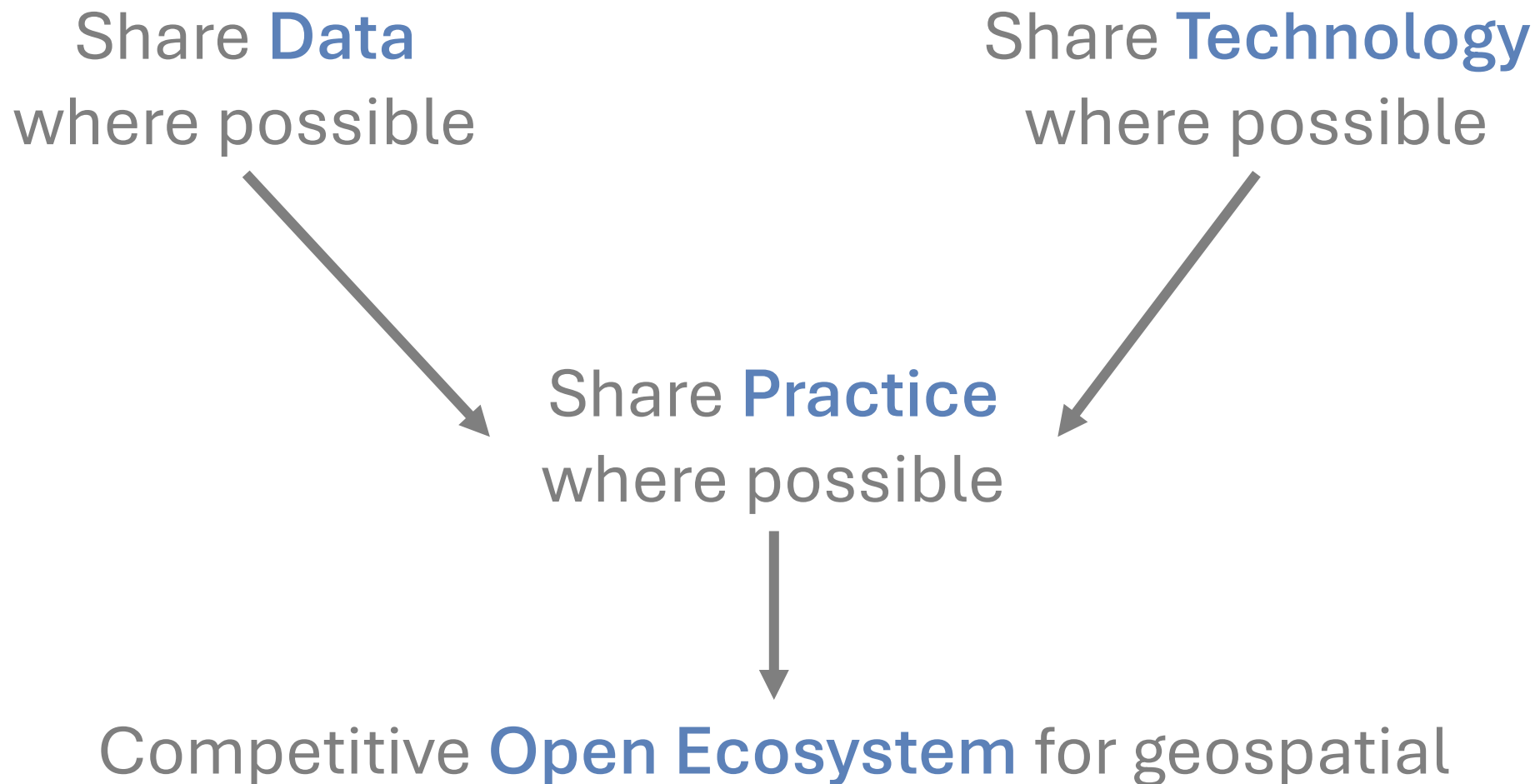


We are on the right track.

- **NSDI Platform** has been established.

What is next?

- My suggestion: work towards **Open Ecosystem** that ultimately **accelerate prosperity, create jobs, and increase productivity.**



UN Smart Maps

Keep web maps open for a better world

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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.

UNopenGIS / 7

Code Issues 48 Pull requests Discussions Actions Projects 1 Wiki Security

2024-05-28T12:30/12:55+09:00 🙋 ×
Smart Maps Meetup Weekly
#475 opened 3 weeks ago by hfu
Open

Filters is:issue is:open Labels 12 Milestones 5 New issue

48 Open ✓ 427 Closed

<input type="checkbox"/>	Author	Label	Projects	Milestones	Assignee	Sort
<input type="checkbox"/>	OpenCelliD	PMTiles	someday/maybe			
	#497 opened 4 hours ago by hfu					
<input type="checkbox"/>	Draft Theory of Change	request for comments				
	#496 opened 20 hours ago by hfu					
<input type="checkbox"/>	Develop a DEM1A parser	priority/SHOULD				5
	#495 opened yesterday by hfu					
<input type="checkbox"/>	[INFO] Global Observer + rwanda10	information				
	#493 opened 2 days ago by hfu					
<input type="checkbox"/>	Nano Bots: I like it.	priority/MAY				
	#491 opened last week by hfu					
<input type="checkbox"/>	Continuous Speech Recognition with Julius	priority/MAY				1
	#490 opened last week by hfu					
<input type="checkbox"/>	🙋 2024-08-16T12:00/13:00+09:00 UN Smart Maps Pacific and Strategy Meetup	meetup				
	#489 opened last week by hfu					

- **[Data]** Free and Open Information **Library** for Geospatial
 - Smart Maps Bazaar project
 - Source Cooperative collaboration
- **[Technology]** New Technology **Labs**
 - Smart Maps Assistant, application of Large Language Models
 - Smart Maps Portable, Raspberry Pi for technical capacity building
- **[Practice]** **Operation** Support
 - UN Street Map support for UNGSC with UN Vector Tile Toolkit.
 - Vector tile experiment by Geospatial Information Authority JP.

Library: share more data to learn together.

Labs: learn new technology together.

Operation: share experience in practice.

A project to enable **hosting** of geospatial data at a **personal** level.

1. InterPlanetary File System (IPFS) for peer-to-peer file sharing.
2. Raspberry Pi (\$100 single board PC)

→ Good for (1) **low-bandwidth** environments, (2) ICT **capacity development**.



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UN Smart Maps Group

① Domain Working Group 7 of the UN Open GIS Initiative. We keep web maps open and test new technologies.

AMX Project 2024-04 PMTiles

AMX (Adopt Map XML) Project is a project to adopt open map data released by Japanese Ministry of Justice. This dataset is produced from the 3rd release in 2024-04. PMTiles Viewer should work on <https://protomaps.github.io/PMTiles?url=https%3A%2F%2Fdata.source.coop%2Fsmartmaps%2Famx-2024-04%2FMojMa...> [\[View More\]](#)

Provided By [@smartmaps](#) • Published on April 17, 2024

`pmtiles` `amx`

Smart Maps Global Elevation Tiles

WEBP elevation tiles, with mapbox pixel packing, packaged in PMTiles. Source data are NASADEM and Global Map data. Please see <https://qiita.com/T-ubu/items/c7bb5697b51f245ef163> for technical details. Observable demo is <https://observablehq.com/d/652ef8ca26776146>.

Provided By [@smartmaps](#) • Published on April 06, 2024

`pmtiles`

Mobility Data GTFS PMTiles


A single PMTiles file created from all active GTFS data from Mobility Database Catalog from Mobility Data. This is a work in progress. Data will be updated. Downloading and conversion script is at <https://github.com/optgeo/mmx-gtfs>.

Provided By [@smartmaps](#) • Published on April 28, 2024

`pmtiles` `gtfs`

Nagasaki LiDAR 3D Tiles (Ver. 2024-05)

WIP

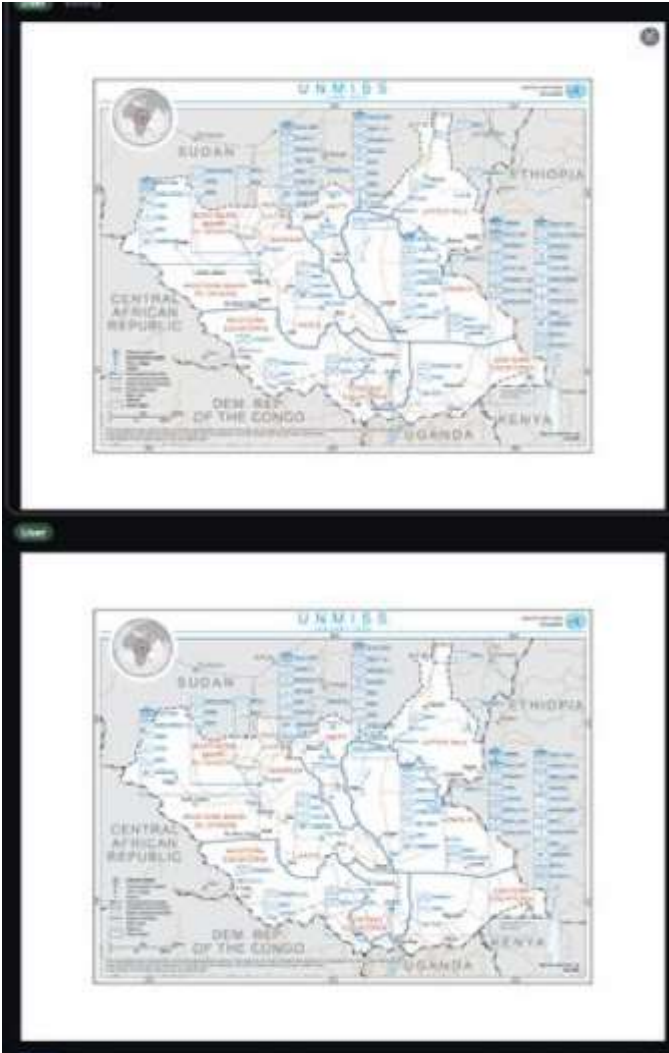


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We explore possibility of LLMs in geospatial applications.



For example, we recently tested [Gemini 1.5 Pro](#) on how it [interprets maps](#):

User: Describe the changes before and after as much as detail.

Model: Comparing the UNMISS deployment maps for June 2023 and January 2024 reveals minimal changes in the overall deployment of peacekeeping forces. Both maps show a consistent presence of troops from various countries across different sectors in South Sudan.

Here's a breakdown of the few noticeable differences:

- Sector Unity (Bentiu):
 - June 2023: Shows the presence of troops from Mongolia.
 - January 2024: No longer indicates the presence of Mongolian troops in this sector. ← ?
- ...

Overall: The changes between the two maps are minor and suggest a possible rotation or withdrawal of a small contingent of troops from Mongolia and Cambodia. The core deployment of UNMISS forces remains largely unchanged.

experiment by Yuseki

- Our preferred **single board computer** for **capacity** development for effective **bandwidth** use.
- Use areas: web maps, open source LLMs, bots, IoT.



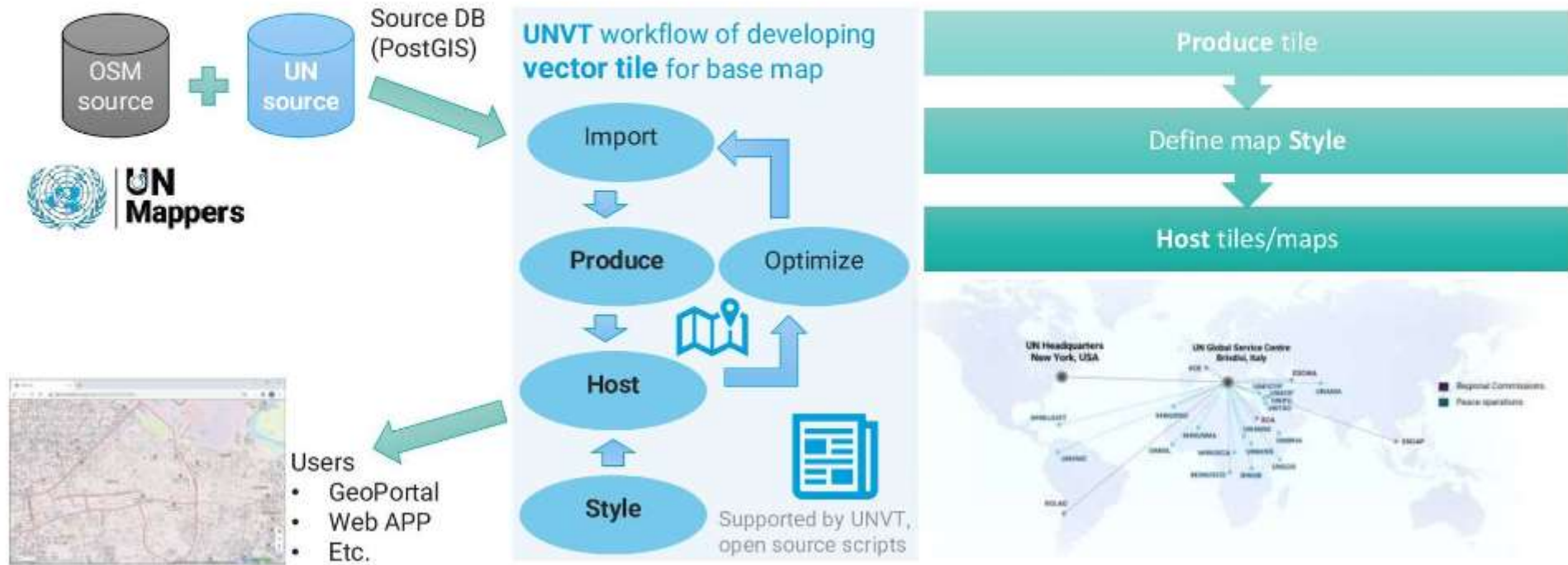
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Labs: learn new technology together.

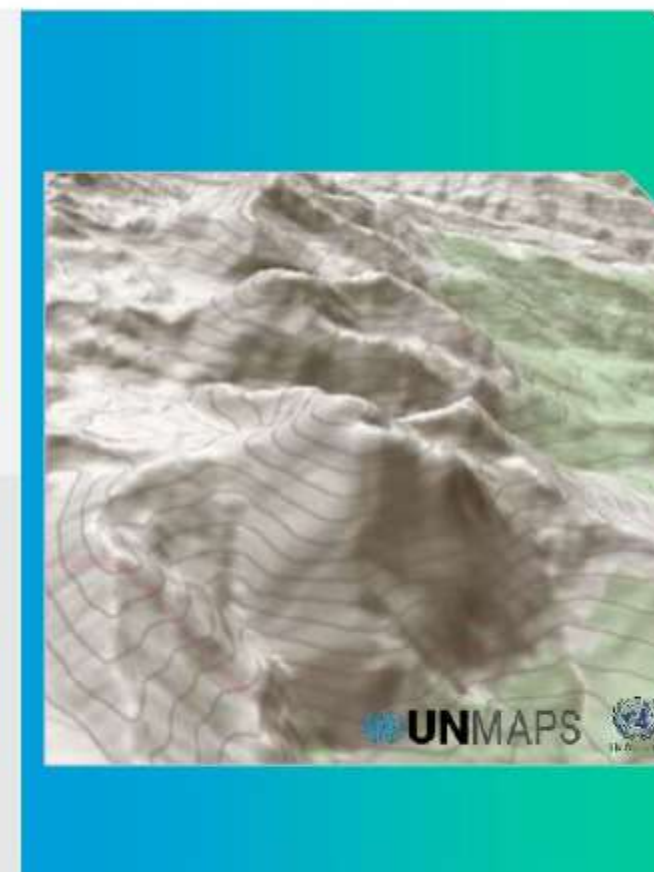
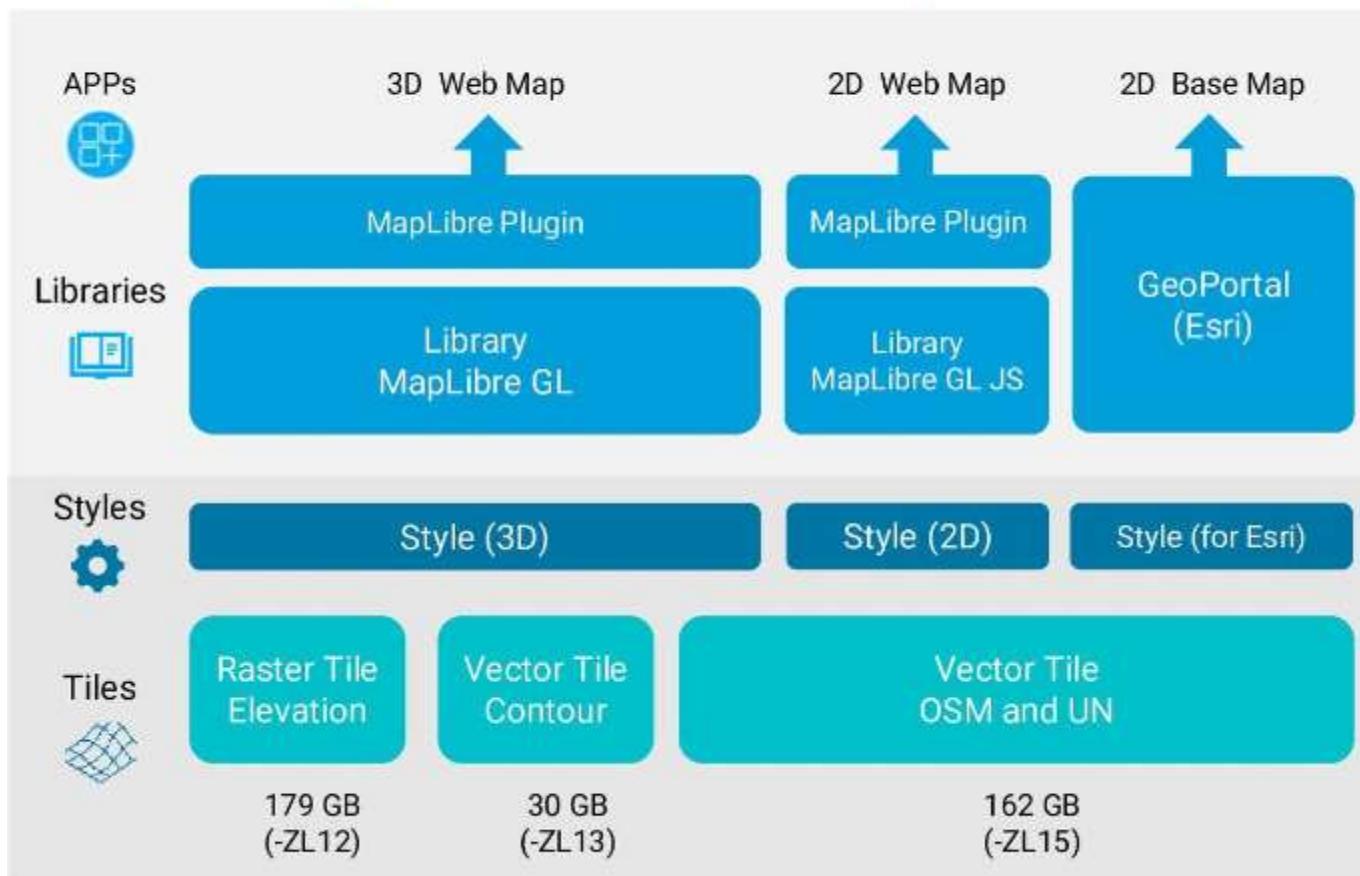
Operation: share experience in practice.

Technical Part: Overview of our work

- **UN Global Service Centre** is providing map service to UN missions, etc. (UN Geoportal, etc.)
- We have worked together to deploy vector tile with open source method in UNGSC. (2020-)



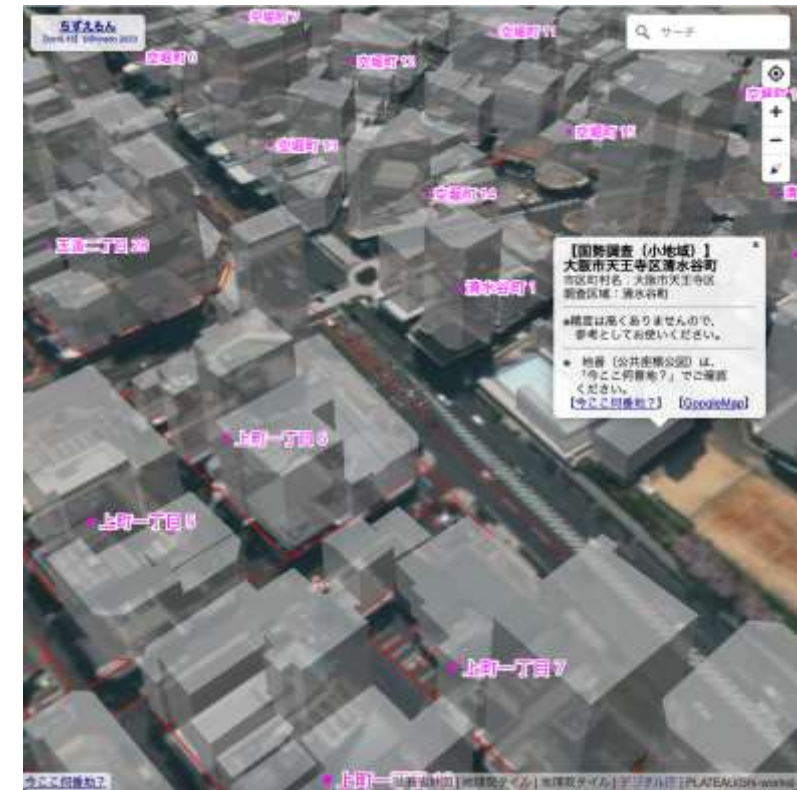
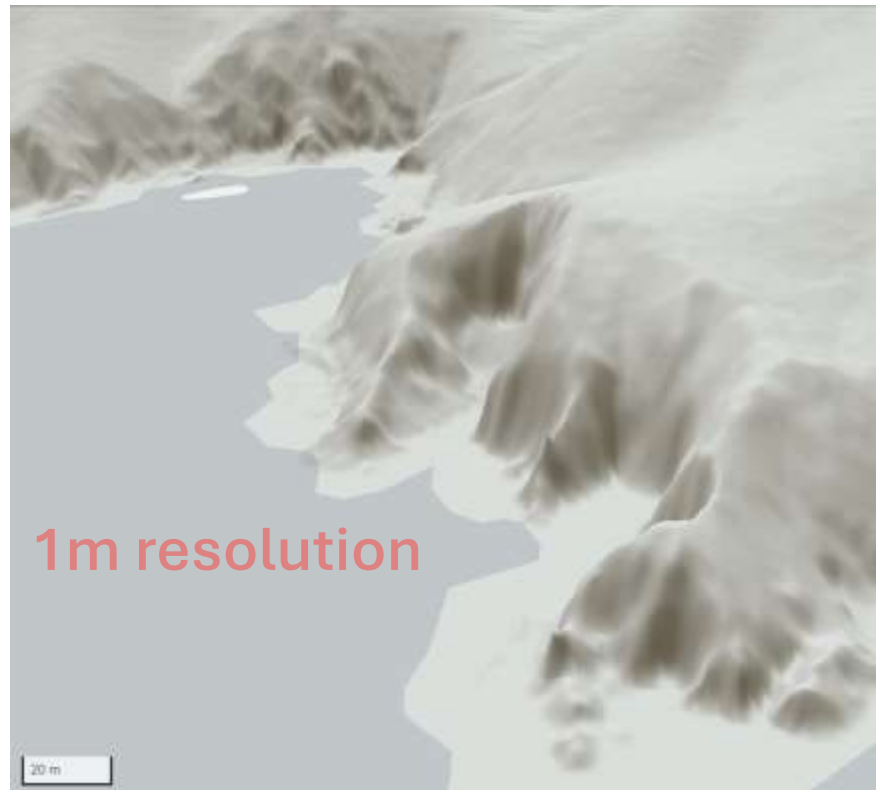
Web map service with Open-Source Vector Tile



We helped GSI to provide their **cloud-native base map vector tiles**.

We provided **1m-resolution cloud-native DEM** from a GSI DEM product.

We prototyped **fit-for-purpose applications** based on these geospatial infrastructure.

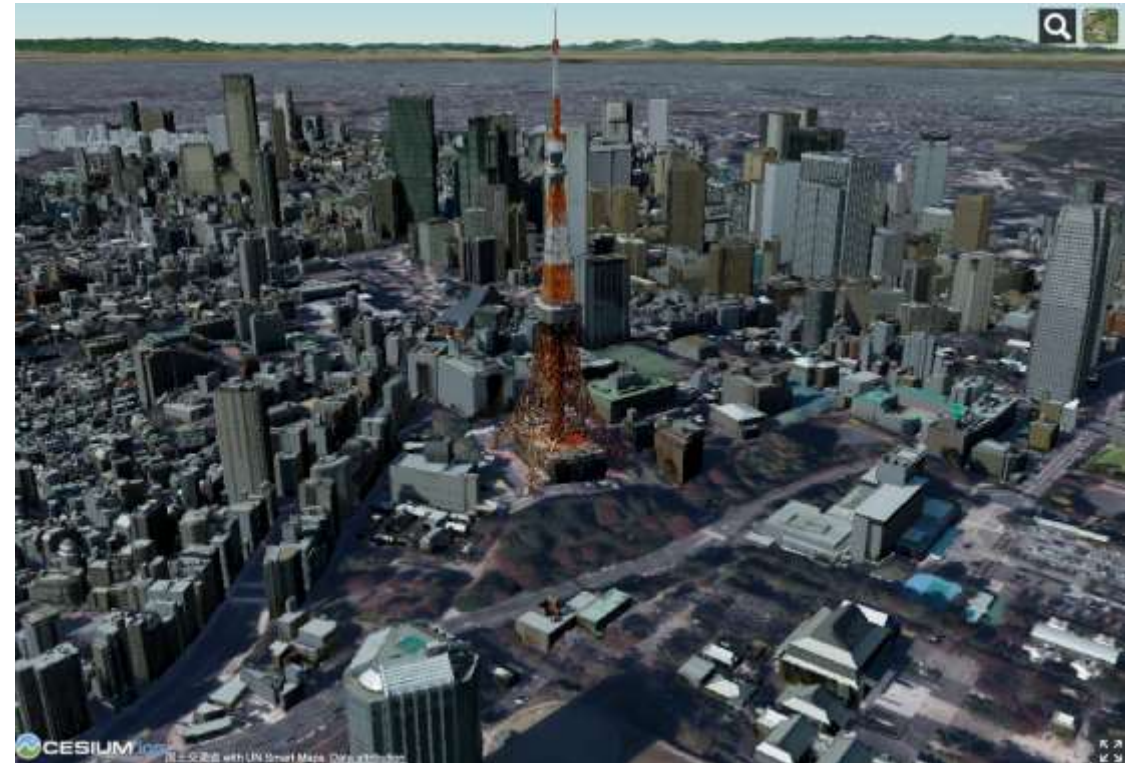


We “adopt” open geospatial data from governments, and turn them more **cloud-native** to add more values.

from Open Nagasaki by Nagasaki Prefecture



from Project PLATEAU by MLIT





Public
NSDI Topographic Basemap



Public
NSDI Topographic Basemap +
Smart Maps global terrain
tiles



Positive failure with 5x exaggerated NASA DEM – we need more precise DEM.

Library: share more data to learn together.

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The Discord server is the best place to ask questions, get help, and meet other UN Smart Mappers.

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What type of UN Smart Mapper are you?
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Mapper
Administrator
Researcher/Developer
Teacher

1. We can build an **Open Ecosystem** upon **NSDI Platform**.
2. The key is to **share data, technology, and practice** where possible, so that the nation create values from NSDI.
3. **Library, Labs, and Operation** are activity areas of the **UN Smart Maps Group**.
4. Let's combine efforts for the **prosperity** in the future, achieving **Sustainable Development Goals**.

Keep web maps open for a better world.
Test new technologies for future geospatial operations.