



A Vision for “Architectural and Urban DX”

Presented at the International Conference

June 24, 2026

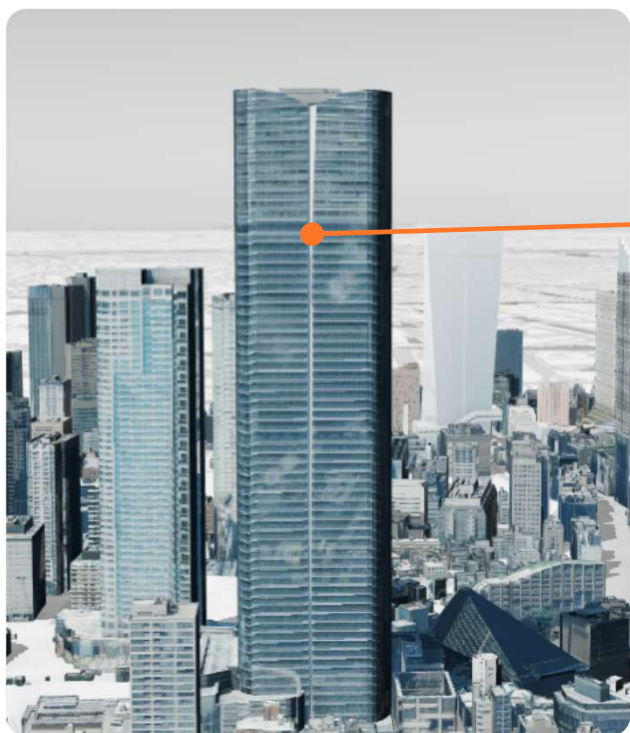


PLATEAU
by MLIT



3D City Model "PLATEAU"

Recreating Cities Across the Country in 3D



Building Shape + Attribute Information

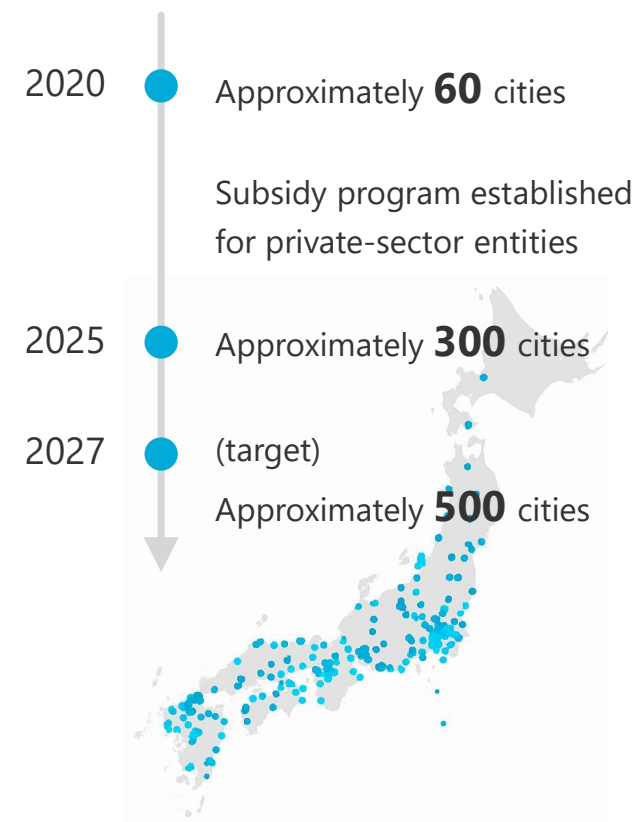
Building Use	Office Building
Height	312.1m
Above-Ground Floors	64
Basement Floors	5
⋮	⋮

Open data

Data download available in
CityGML format.



Status of Data Preparation

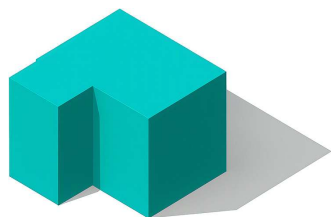


3D City Model “PLATEAU”

LOD (Level of Detail)

LOD 1

Building
+ Height Information



- Box-shaped building model
- Height information available
- Flood damage estimation, etc.

LOD 2

+ Roof Shape



- Building roof shapes
- Landscape simulations
- Urban planning studies, etc.

LOD 3

+ Exterior (Openings)



- Building exterior (windows, doors)
- Autonomous driving, drone delivery
- Building planning studies, etc.

LOD 4

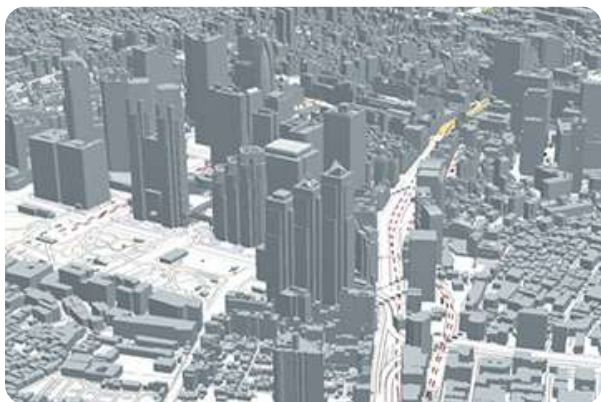
+ Interior (BIM/CIM)



- Modeling building interiors (BIM/CIM, etc.)
- Seamless indoor/outdoor simulations

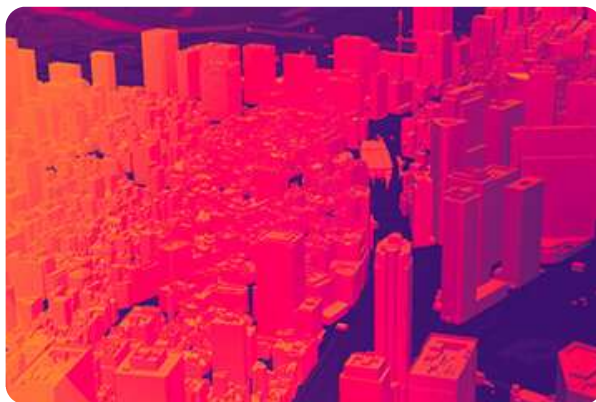
3D City Model “PLATEAU”

The Value of 3D City Models



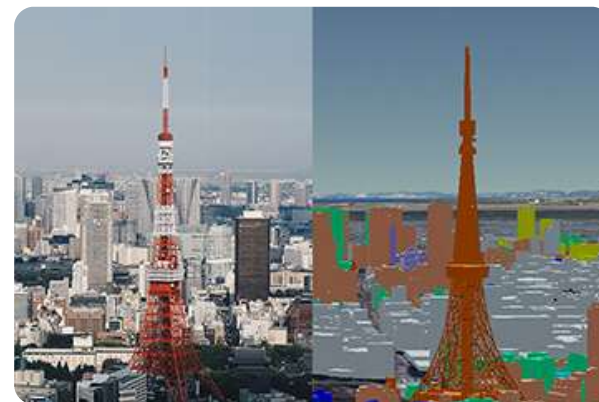
Visualization

Urban spaces can be understood three-dimensionally, improving clarity and persuasiveness.



Simulation

Recreating urban spaces with 3D information in cyberspace enables a wide range of precise simulations.

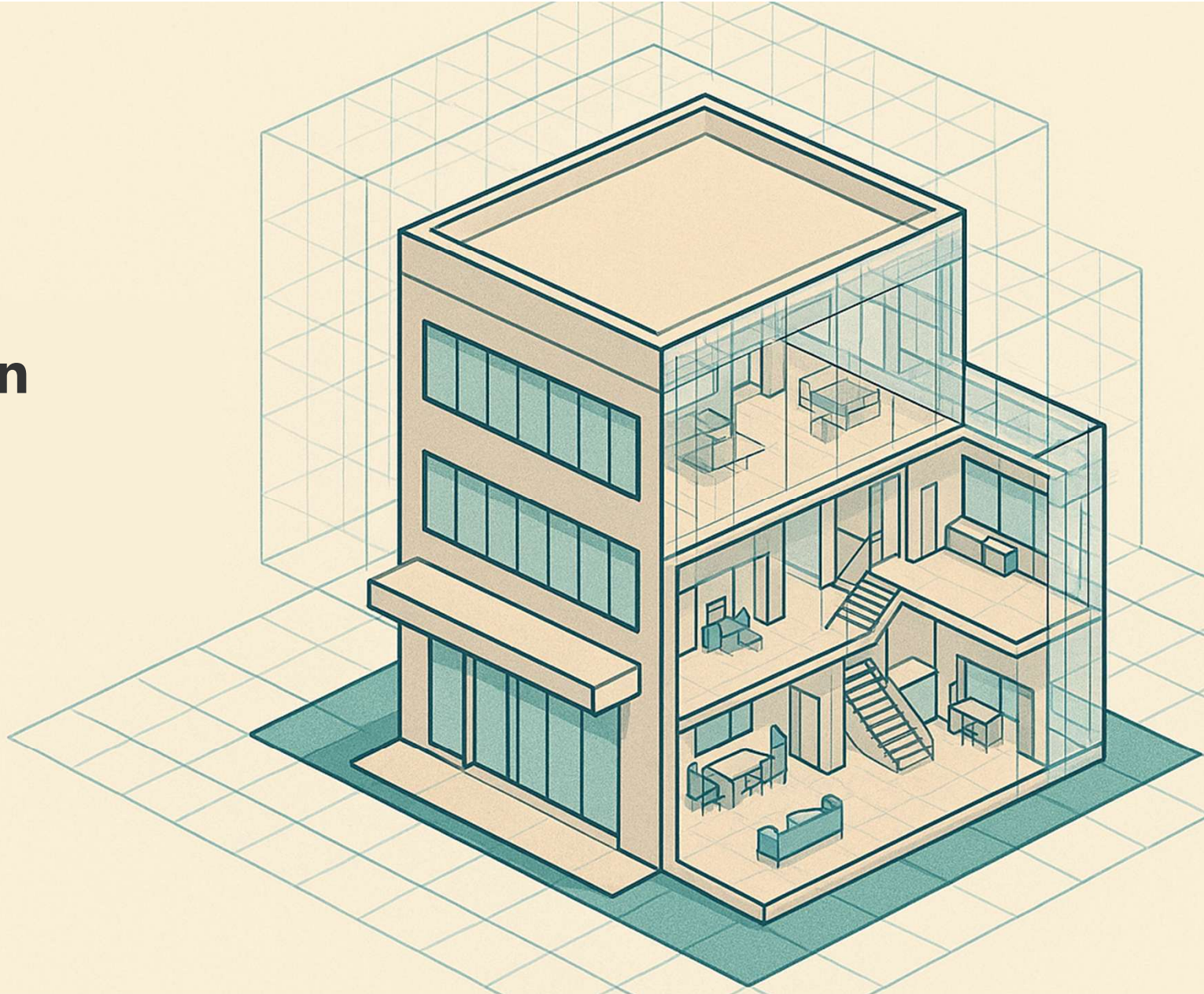


Interactive

Provides a platform for physical and cyber spaces to exchange information and interact with each other.

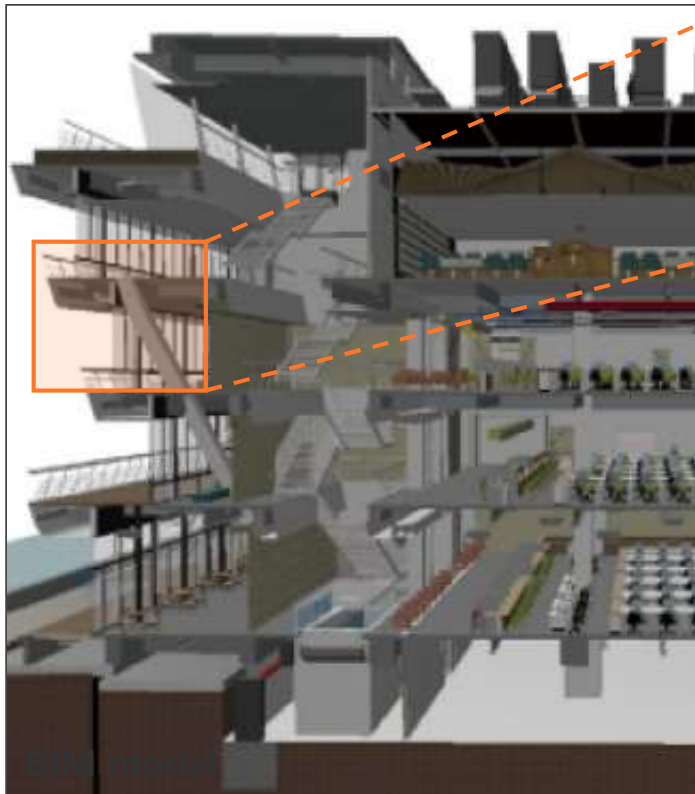
BIM

Building Information Modeling



BIM (Building Information Modeling)

Integrated System of 3D Shape Information and Attribute Information



Examples of attribute information

- **Wall**
Thickness, sound insulation performance ...
- **Column Information**
Structure, materials ...
- **Door information**
Locks, fire performance ...

From CAD to BIM

Current mainstream (CAD)

- Drawings are created separately for each floor, etc.
- Information about walls, equipment, etc., is saved in separate files.



BIM

- Integrated management of 3D models and attribute information



3D Models



Attribute information

Real Estate ID

Unique Challenges of the address system in Japan

- It is difficult to uniquely identify the building.

Problem 1 Variation in spelling

Kasumi**g**aseki ("が": correct spelling)

"ヶ", "ケ", "ガ" (variation in spelling)

Problem 2 Duplicate addresses

Approximately 20% of buildings nationwide and 40% of buildings in Tokyo share the same address with at least one other building.

Assign a unique real estate ID to each building

- The building can be uniquely identified.
- Various information can be linked to a real estate ID.

Real Estate ID : 12345abc-0001

Post code 100-0001

Address 2-1-3 Kasumigaseki...

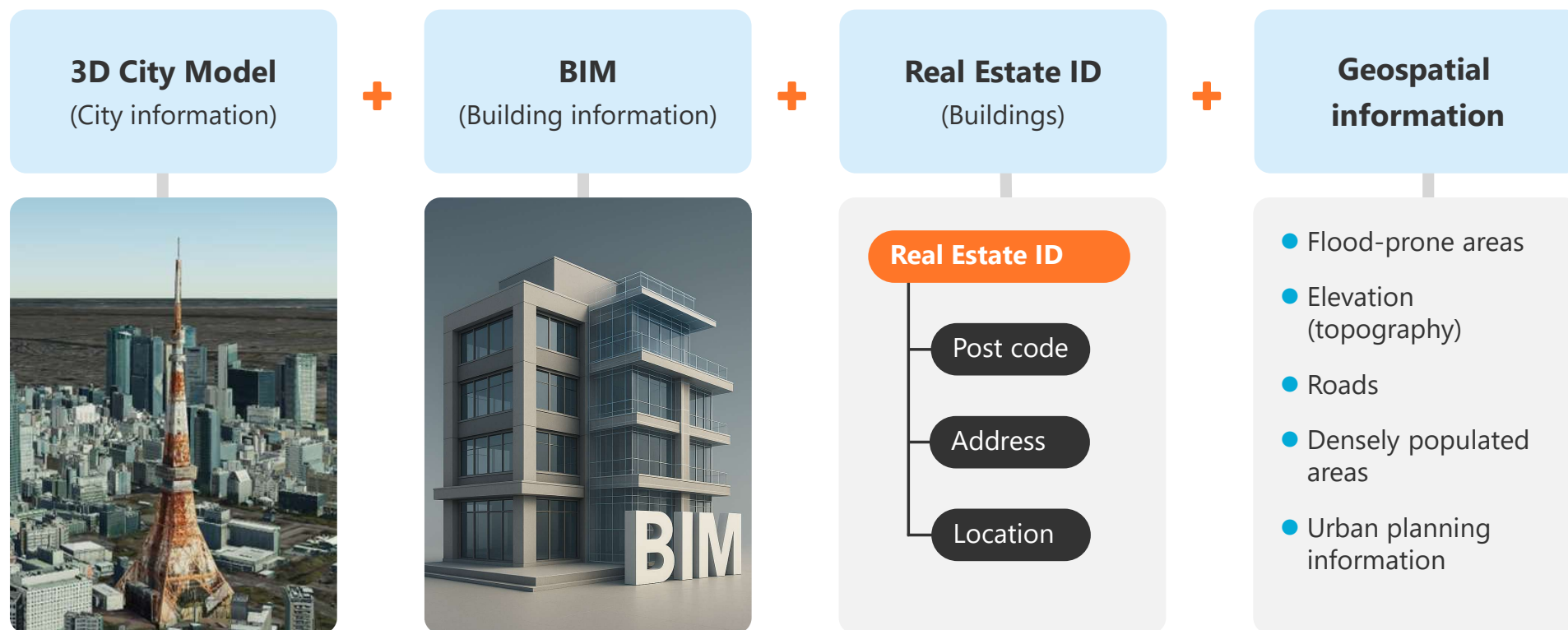
Location Latitude 35.6760
Longitude 139.7502

⋮



Vision for “Architectural and Urban DX”

Full-scale social implementation of 3D digital twins in the 2030s



10 Pillars for Achieving This Goal

- 01 Development, updating, and utilization of 3D models
- 02 Integration of 3D models into administrative procedures, etc.
- 03 Development of sustainable use cases through industry-academia-government collaboration
- 04 Establishing rules regarding security and privacy
- 05 Participation in international standards discussions and overseas expansion
- 06 BIM x 3D City Model Integration Cycle
- 07 Full-scale operation of real estate IDs and establishment of a sustainable system
- 08 Data integration via MCP servers, etc.
- 09 Realizing synergies through coordination among 3D initiatives
- 10 “Architectural and Urban DX” × AI = Promotion of Geospatial AI

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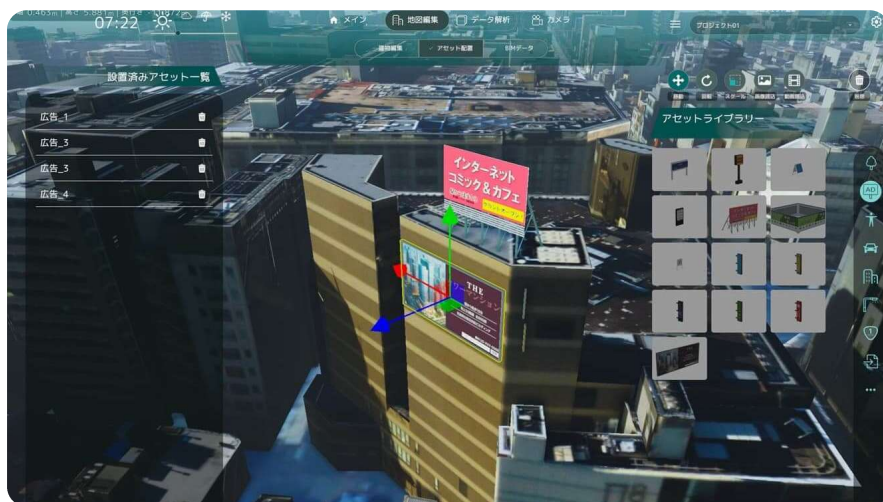
09 Realizing synergies through coordination among 3D initiatives

10 “Architectural and Urban DX” × AI = Promotion of Geospatial AI

02 Integration of 3D Models into Administrative Procedures, etc.

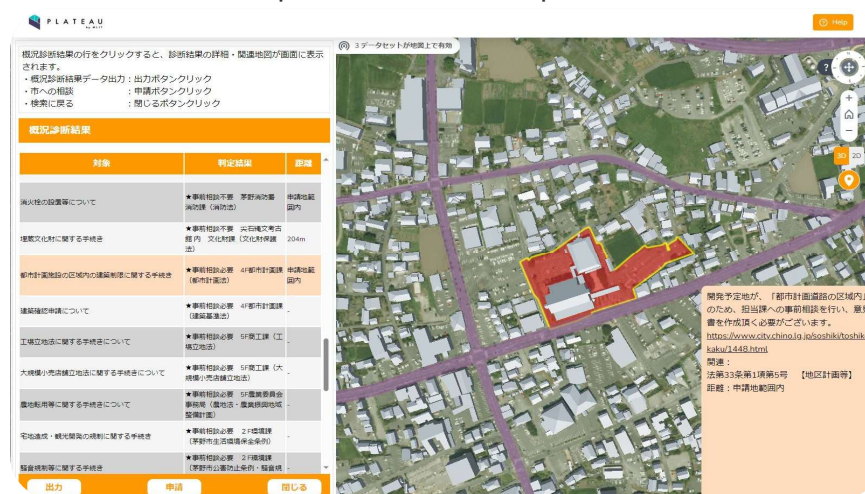
Administrative procedures related to landscape

- Applications and permits are required to install outdoor advertisements.
- We developed a tool that allows simulations using 3D models.
- We will consider implementing this tool in actual application process in the future.



Administrative procedures related to development

- In development permit applications, the local government and the developer conduct prior consultations.
- Using 3D city models for prior consultations can improve efficiency.
- This has already been implemented in Kisarazu City, Chiba Prefecture, with plans for future expansion



04 Establishing Rules Regarding Security and Privacy

Classification of public and non-public data

01 Public

Data of high public interest and low confidentiality
Example: Building exterior/outer shape, etc.

02 Disclosure / Sharing

Data whose disclosure leads to benefits and smoother real estate transactions

03 Non-public

Highly confidential data
Example: Defense facilities, etc.

Consideration of rights-related issues

Consideration of copyrights and intellectual property rights regarding data created by private-sector entities, etc., and rules for secondary use

- Design data created with BIM
- 3D survey data



Data management and operation system

- It is necessary to clarify the scope of data disclosure, update procedures, etc.
- We are currently sharing underground construction models and other relevant information with stakeholders for actual urban development projects, and are considering operational systems and rules.



06 BIM x 3D City Model Integration

Integration of BIM and 3D city models

Data enrichment

Link BIM-created data with 3D city models



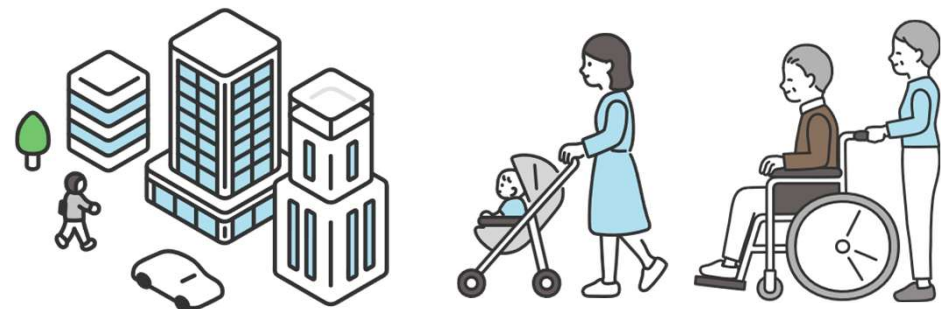
Data utilization

Utilize 3D city models in architectural plans

Examples of use cases

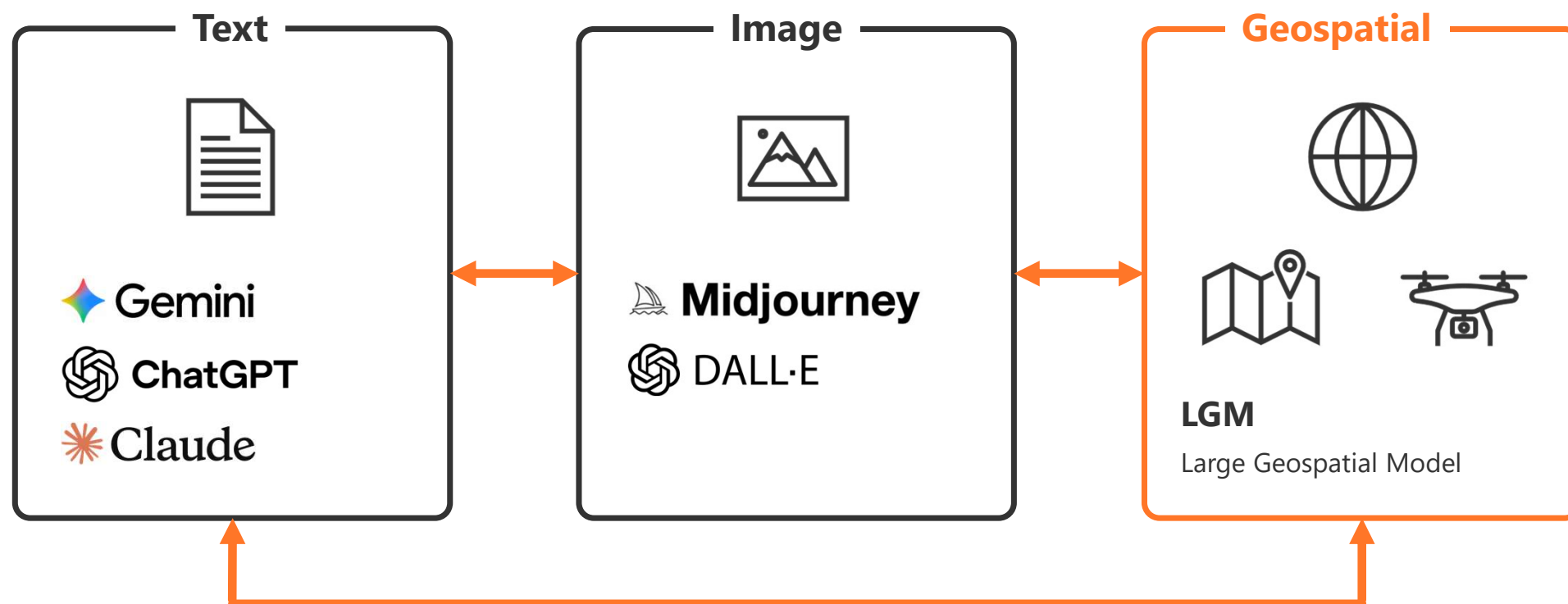
3D Visualization of Accessible Routes

- Supports route searching both outdoors and indoors.
- At terminal stations and similar locations, users can identify routes that avoid stairs.
- Enables smooth mobility for wheelchair users, people with strollers, etc.



10 Geospatial AI (Geospatial Information x AI)

Multimodal AI capable of understanding spatial relationships



10 Geospatial AI (Geospatial Information x AI)

Data Preparation

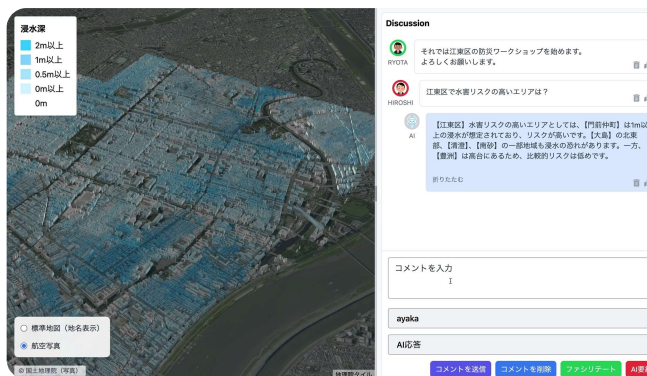
- AI learns from vast amounts of satellite imagery, map data, and other information
- Efficiently developing high-quality geospatial information



AI creates 3D models based on point cloud data

Visualization and Data Analysis

- GIS operation and data analysis using natural language
- Data analysis becomes easier and more sophisticated.



GIS operations using natural language (Loci AI)

Prediction, Proposal, Action

- AI learns from vast amounts of geospatial information to understand space.
- AI autonomously acquires and analyzes data, and makes predictions and suggestions.

The future we expect

Geospatial AI will solve geospatial challenges in various fields and drive a productivity and lifestyle revolution in Japan.

10 Geospatial AI (Geospatial Information x AI)



Example: Discussion on urban planning

LLM

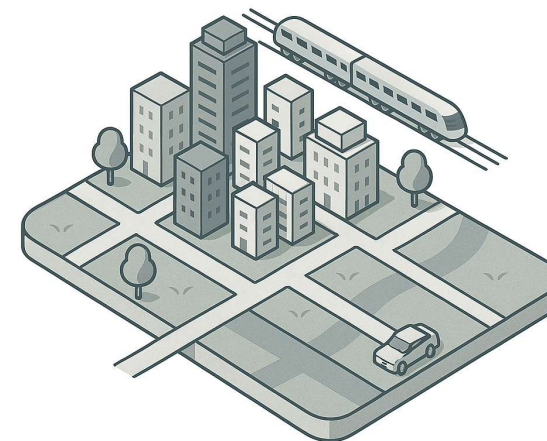
LLMs handle textual information and can perform tasks such as automatic transcription and meeting minutes generation.

Transit operator: The approximate location of the new station has largely been decided. Do you think we will be able to obtain consent from the surrounding landowners?

Developer: After surveying the surrounding land, it appears that the rights relationships are complex. What level of acquisition price should we propose?

Geospatial AI

Geospatial AI understands spatial relationships and can visualize discussion content on maps or run simulations.



Overall Architecture of Geospatial AI (Geospatial Information x AI)

Value: Transformation in
Decision-making

Integration
(solving complex problems)

**Proactive/preventive
capability** (predictive)

Speed
(lead time)

Reproducibility
(reduced reliance on
individual expertise)

Scalability

Technology: AI models and Data

Governance: Responsibility and Trust

