

PLATEAU

City Bureau, Ministry of Land, Infrastructure, Transportation and Tourism,
Japan



PLATEAU
by MLIT

PLATEAU is a project led by the Ministry of Land, Infrastructure, Transportation and Tourism in Japan (MLIT), that focuses on developing, utilizing, and sharing 3D city models to create new value in society and address local issues through digital twins.

Background

Japan's Society 5.0 is an initiative aimed at building a human-centered society that balances economic advancement with the resolution of social problems through a system that highly integrates cyberspace and physical space. As a result, the demand for digital twins has been increasing. Since 3D city models serve as the foundational platform for integrating various datasets and are essential for the construction of digital twins, MLIT initiated the Project PLATEAU in 2020, aimed at developing, utilizing, and providing open data for 3D city models.

Challenges

Japan has approximately 1,700 municipalities, which are the main entities responsible for developing geospatial data. However, since each municipality organizes its own data, **interoperability** poses a significant challenge. Additionally, many municipalities have limited budgets, making it difficult to **fund allocation** for the development of new 3D city models. Furthermore, even if they succeed in the initial development, it is necessary to prioritize the **continuation of updates** regularly.

Goals

The goal of Project PLATEAU is to establish an **ecosystem of 3D city models that promotes greater urban resilience**. Therefore, the project not only aims to expand data coverage but also seeks to establish best practices for various use cases, foster open innovation, and facilitate social implementation.

Key components

1. Governance

- PLATEAU is a **framework that facilitates collaborative efforts among government, industry, and academia**, led by the national government. By leading core and advanced development in collaborative areas, the national government enables local governments and the private sector to utilize these resources and allocate budgets for resolving their respective challenges.
- The geographic spatial data maintained by each municipality is optimized for specific purposes; however, interoperability is low, and overall optimization has not been achieved. Therefore, PLATEAU has introduced a standard data model. We have adopted **OGC's CityGML** as this standard data model. By leveraging the extensibility of CityGML, we enable the coexistence of **municipality-specific data and common data that enhances reusability**.
- The data quality of 3D city models is based on the 2D maps and statistical surveys that municipalities regularly update in accordance with legal regulations. The **legal support for data maintenance ensures the continuity of data updates**.

2. Data and Technology

- All 3D city models developed through PLATEAU will be made available from the **Geospatial Information Center**. These 3D city models can be used freely by anyone, regardless of purpose.
 - The Geospatial Information Center serves as a **one-stop portal for the distribution of geospatial data held by various entities from government, industry, and academia**. Users can search for and obtain geospatial data (paid or free) from various institutions through the center.
- To reduce the costs of data creation and expand the range of its utilization, PLATEAU has developed various tools. These tools are not only published as **open source** but also accompanied by **technical reports to share the insights** gained from their development. Examples include:
 - The **LOD2 Building Model Generation Tool** automatically creates LOD2 building models using

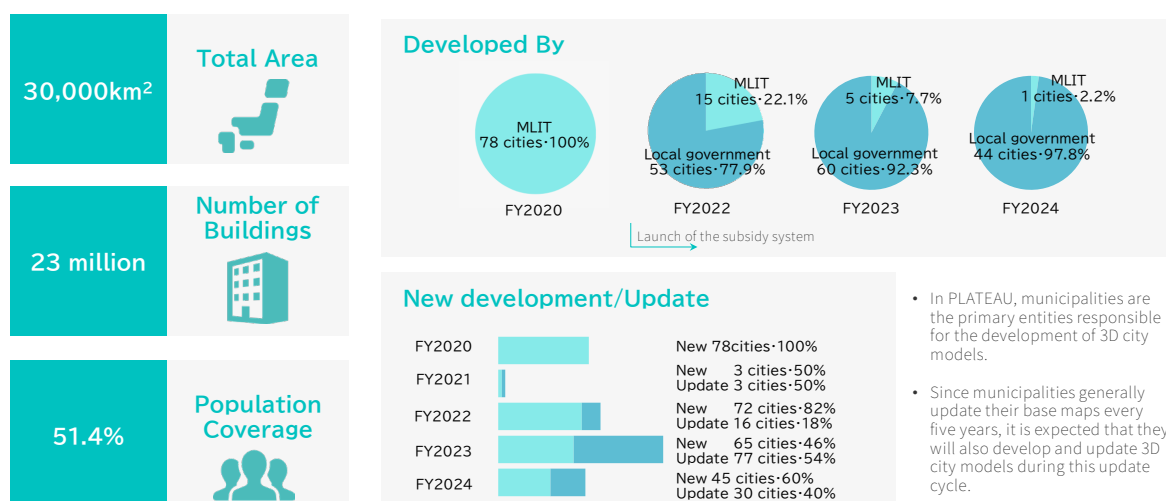
- input data such as point clouds and building outline data, utilizing AI technology.
- The **PLATEAU SDK** has been developed to **engage a wider audience** of individuals interested in IT. In many cases, geospatial data has primarily been intended for specialists. However, by attracting a broader user base, its value can be enhanced, leading to greater motivation for data maintenance and updates. With this SDK, users can develop applications and conduct simulations using 3D city models, even without specialized knowledge of CityGML.

3. People

- **PLATEAU Consortium** is a **collaborative platform for various stakeholders** interested in its initiatives, enabling diverse players to share their issues and engage in open discussions.
 - The consortium facilitates the matching of industry players with the technologies needed to address challenges faced by local governments, while also promoting collaborations between companies that can complement each other's strengths and weaknesses.
 - Local government organizations have faced personnel reductions, resulting in officials often lacking a point of contact for consultation. In these situations, the consortium serves as a platform for local government officials to collaborate and share challenges and solutions.
- **PLATEAU-Next (Innovation Events)**
 - PLATEAU-Next consists of a series of events such as hackathons and hands-on workshops. Through these events, we expect developers and creators from various fields to **combine 3D city models with their own technologies and perspectives to create new value**. There have also been instances where the outcomes of these events have led to new ventures.
 - Additionally, PLATEAU publishes tutorials that explain how to handle 3D city models and use the tools for various users.

Project Achievement

- PLATEAU website: <https://www.mlit.go.jp/plateau/>
 - 3D City Models Datasets: https://front.geospatial.jp/plateau_portal_site/
 - Open Sources: <https://github.com/Project-PLATEAU>
 - Technical Specifications: <https://www.mlit.go.jp/plateau/libraries/handbooks/>
 - Use Cases: <https://www.mlit.go.jp/plateau/use-case/>
 - Tutorials: <https://www.mlit.go.jp/plateau/learning/>
 - Community (Consortium): <https://www.mlit.go.jp/plateau/consortium/>
 - Community (Innovation Events): <https://www.mlit.go.jp/plateau-next/>
- 3D City Models: Achievement Overview (2020–2024)



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