

## APPENDIX-1 Glossary

| Glossary                             | Meaning                                                                                                                                                                                                                                                          | General Terms |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| Feature                              | An object that is directly or indirectly related to a position on the earth. <sup>[1]</sup> Natural environment (e.g., rivers), natural phenomena (e.g., weather), man-made objects (e.g., buildings), man-made boundaries (e.g., administrative district), etc. | X             |
| Attribute information                | Information that describes the characteristics of the land (e.g., building use, building area, number of stories, structure, etc.).                                                                                                                              | X             |
| Metadata                             | Descriptive information about the data, not the data itself. <sup>[2]</sup> (Although there are other definitions of metadata, they are used in this document.)                                                                                                  | X             |
| Spatial ID                           | An identifier with a code assigned to a spatial voxel so that it can be uniquely located even if the 3D spatial information is based on different specification.                                                                                                 |               |
| Spatial Voxel                        | The spatial region of each rectangular parallelepiped obtained by dividing every space on the earth, including the air, the ground, the underground, indoors, and the sea, into a rectangular grid.                                                              |               |
| Geodetic System                      | The rules for measuring positions on the earth and the coordinates that follow them. <sup>[3]</sup>                                                                                                                                                              | X             |
| Japan Geodetic System 2024 (JGD2024) | The geodetic system currently used by Japan. It is based on the International Terrestrial Reference System (ITRF), which is a global geodetic system that can be used throughout the world. <sup>[3]</sup>                                                       | X             |
| WGS84                                | A global geodetic system established and maintained by the United States. <sup>[4]</sup>                                                                                                                                                                         | X             |
| XYZ tiles                            | A specification that defines the earth as a flat square and distributes data by dividing it into tiles at each zoom level.                                                                                                                                       | X             |
| Geographical Survey Institute Maps   | A web map of Japan as captured by the Geospatial Information Authority of Japan, including topographic maps, photographs, elevations, topographic classifications, and disaster information. <sup>[5]</sup>                                                      | X             |
| height basis                         | A reference plane for locating spatial voxels in three-dimensional space on the Earth.                                                                                                                                                                           |               |
| Geoid                                | A plane of equal potential energy due to the Earth's gravity (the isopotential surface of gravity). <sup>[6]</sup>                                                                                                                                               | X             |
| Geoid Model                          | A basis for determining elevation using satellite positioning. <sup>[12]</sup>                                                                                                                                                                                   | X             |
| Japanese Geoid 2024                  | Geoid model of Japan released by the Geospatial Information Authority of Japan.                                                                                                                                                                                  | X             |
| Ellipsoid height                     | The height from the surface of a model of the earth represented by an ellipsoid of revolution.                                                                                                                                                                   | X             |
| ZFXY                                 | Spatial ID in the form of zoom level (z), f-index, x-index, and y-index                                                                                                                                                                                          |               |
| Zoom level                           | The level at which a 3D space is divided into spatial voxels. No division is zoom level 0, eight divisions are zoom level 1, and each division increases by one, decreasing the size of each spatial voxel.                                                      |               |
| f-index                              | The elevation (vertical direction) number of the spatial voxel.                                                                                                                                                                                                  |               |
| x-index                              | The Longitude (east-west direction) number of the spatial voxel.                                                                                                                                                                                                 |               |
| y-index                              | The Latitude (north-south direction) number of the spatial voxel.                                                                                                                                                                                                |               |
| Spatial attribute information        | Data that represents the real world for each purpose.                                                                                                                                                                                                            |               |

## Source

- [1] the Geospatial Information Authority of Japan "Operational Guidelines for JSIG 2.0"  
[https://www.gsi.go.jp/GIS/stdind/stdindpdf/jsig\\_guide.pdf](https://www.gsi.go.jp/GIS/stdind/stdindpdf/jsig_guide.pdf)
- [2] the Geospatial Information Authority of Japan "Practical Application of Geospatial Information (JPGIS)"  
[https://www.gsi.go.jp/GIS/jpgis-wj\\_about.html](https://www.gsi.go.jp/GIS/jpgis-wj_about.html)
- [3] the Geospatial Information Authority of Japan "Japan's Geodetic System"  
<https://www.gsi.go.jp/sokuchikijun/datum-main.html>
- [4] the Geospatial Information Authority of Japan "Questions and Answers on Global Geodetic System Transition"  
<https://www.gsi.go.jp/LAW/G2000-g2000faq-1.htm>
- [5] Geospatial Information Authority of Japan "How to use Geospatial Information Authority of Japan"  
<https://maps.gsi.go.jp/help/intro/>
- [6] Geospatial Information Authority of Japan "Geoid modeling"  
[https://www.gsi.go.jp/buturisokuchi/grageo\\_geoidmodeling.html](https://www.gsi.go.jp/buturisokuchi/grageo_geoidmodeling.html)