

AW3D[®] | Global High-resolution 3D Map

AW3D is the world's most precise, pre-produced global digital elevation model covering all land spaces with 5-meter resolution, developed and sold jointly with the Remote Sensing Technology Center of Japan ("RESTEC"). AW3D has been used in 300 projects, over 70 countries across the globe mainly in emerging countries in Asia and Africa, to contribute to infrastructure, disaster prevention and much more. In May 2015, NTT DATA launched enhanced and building-focused services utilizing satellite images from DigitalGlobe. This service offers a high-definition and high-resolution 3D map at 0.5 meter to 2 meter resolution. The building-focused service offers highly detailed pictures of structures and their heights in a vector-map format.

AW3D Standard

High-resolution and pre-produced global digital elevation model covering all land spaces with 5-meter resolution.



Product Type	DSM / DTM
Resolution	5m
Satellite	JAXA - ALOS
Area	Global area (off-the-shelf)

AW3D Enhanced

The highest precision DEM in 0.5m Resolution.



Product Type	DSM / DTM
Resolution	0.5m / 1 m / 2 m
Satellite	DigitalGlobe - WorldView etc.
Area	Global area (on demand)

AW3D Ortho Imagery

The highest quality orthorectified imagery in the world.



Product Type	Orthorectified imagery
Resolution	30cm / 40cm / 50cm / 60cm / 2.5m
Satellite	JAXA - ALOS (2.5m) & DigitalGlobe - WorldView (30cm - 60cm)
Area	Global area (on demand)

AW3D Building

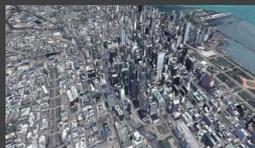
Global high-resolution 3D map building.



Product Type	3D vector (building)
Satellite	DigitalGlobe - WorldView
Area	Global area (on demand)

AW3D Metro

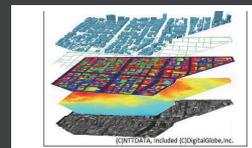
The world's most precise off-the-shelf 3D map dataset.



Product Type	3D vector / DSM / DTM
Satellite	DigitalGlobe - WorldView
Area	Japan, North America

AW3D Telecom

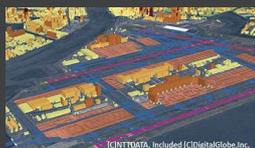
Perfect 3D datasets for any simulation of wireless signal propagation.



Product Type	3D vector (building, bridge, vegetation), clutter (DLU / DHM), DTM
Satellite	DigitalGlobe - WorldView etc.
Area	Global area (on demand)

AW3D Airport

Terrain and obstacles dataset optimized for aviation standards (eTOD).



Product Type	Obstacle / DTM / Airport map
Satellite	DigitalGlobe - WorldView etc.

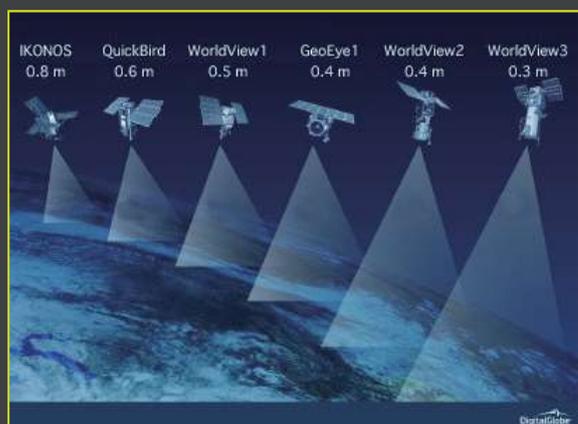
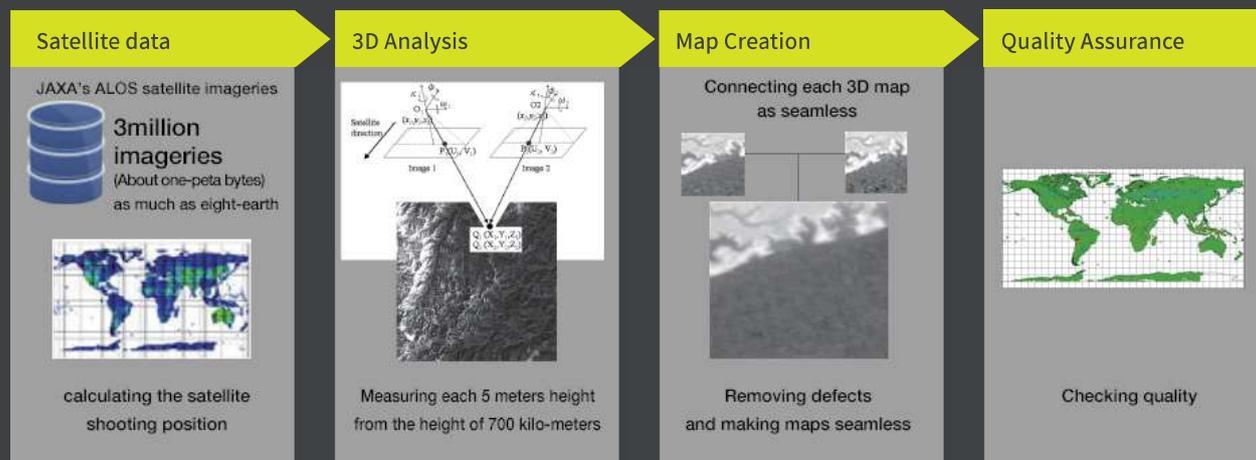


Technology

Advanced Image Processing Algorithm x High-performance Data Processing System

Satellite imageries acquired by DAICHI were processed to 3D map with the advanced image processing algorithm that was co-developed by Remote Sensing Technology Center of Japan (RESTEC) and JAXA; there were 4 stages in this process: 1) preprocessing, 2) 3D analysis, 3) mapping and 4) quality check. There are more than 3 million images of the entire global land area acquired by DAICHI; it takes extremely long time to process them because total amount of data size of these high-resolution imageries are enormous.

However, the high speed and precise information processing technology of NTT DATA enabled commercialization of this map product at a realistic timeline. By adding further improvements, we were able to process 2,000 set of imageries (2TB) per day through parallel processing on the server. Even with this high-performance system, it took about 2 years to complete processing and verify worldwide data. Finally, the world's first global 3D map with 5m resolution, AW3D, was released in 2016.



DigitalGlobe satellites Constellation (WorldView and others)

Ultra-high Resolution 3D Map from Multiple Satellites

5 m resolution DEM is good enough to understand terrain, however higher resolution is preferred in some applications. For example, knowing finer undulation is essential to perform sunlight simulation in urban area. In order to meet our customer's demand, we collaborate with DigitalGlobe, a US based company who operates one of the world's highest resolution commercial earth observation satellites, and provide higher resolution 3D map based on 30cm resolution imageries taken with their WorldView satellite series. This high resolution 3D map is materialized through a technical innovation including processing imageries in multiple angles taken with various high performance satellites. Thanks to this technological innovation, the accuracy of the 3D Map is successfully improved to the level where one tree can be identified.

There are one standard and two made-to-order products we've added to our AW3D lineup; 1) AW3D standard-available entire world DEM in 5m resolution, 2) AW3D enhanced-higher resolution DEM up to 0.5m to 2m, and 3) AW3D building-dataset includes shape and height of buildings.



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