



LuxCarta utilizes readily available digital surface models, along with its BrightEarth™ imagery mosaic and land use/land cover (LULC), to generate a global digital terrain model (DTM) at 10m. Utilizing the BrightEarth platform's artificial intelligence and physical simulation, LuxCarta has generated a DTM for the entire world.



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## BrightEarth products

are ideally suited for the following use cases:



**Insurance:** risk assessment, catastrophic-loss reduction, response planning for natural catastrophes



**Defense and homeland security:** simulation & training, mission planning/rehearsal



**Environment:** monitoring, planning, and management; floods, forest damage and water pollution



**Utilities:** planning and management; energy transmission, telecom



**Entertainment and media:** scenery development for computer games, movies and news programs



**Flight simulation:** military and commercial aviation training



**Mining:** environmental impact assessments [EIA] and site remediation

And more....



BrightEarth Imagery



Deep Learning



DSM

AI Insights

DTM

## Why BrightEarth?

10m global landmass availability

Ease of use - download by geocell, region or the entire globe

Flexible licensing options

Created in the cloud; delivered via the cloud

### Licensing

- Single user, company-wide or integrator
- Per geocell, region or as whole earth

## Technical Specifications

- Format: 16-bit raster, GeoTIFF. Other formats upon request
- Streaming support: QNZ server is available to mesh the terrain at runtime for consumption by simulation engines
- Projection: Geodetic\*
- Coordinate reference system: metric. Horizontal reference datum is Mercator projection (EPSG:3857) and the vertical reference datum is the Earth Gravitational Model 2008 (EGM2008)
- Grid spacing: 10m
- Resolution: 10m spatial resolution
- Absolute Vertical Accuracy < 2.5m (90% linear error)
- Relative Vertical Accuracy < 2m (slope ≤ 20%) < 4m (slope > 20%)
- Absolute Horizontal Error < 6m (90% circular error)
- Source: Sentinel-2 and Copernicus WorldDEM-302010-2014
- Other layers: DSM (surface model) & DHM (height model) derived from DTM available as discrete outputs
- Vintage: 2014-2022

\* Only projection supported through online delivery; UTM and other coordinate systems available upon request

## About BrightEarth

BrightEarth is LuxCarta's product line created using AI-enhanced production techniques. BrightEarth web services offer high-resolution building, road and tree extraction, 23-class land use/land cover (LULC) and digital terrain model (DTM) creation using a variety of imagery sources in real time. It also incorporates a seamless cloud-free global mosaic, 23-class LULC as well as time-of-day population maps derived from Sentinel-2 imagery at 10m, updated at regular intervals. These innovative products — based on more than 30 years of geospatial and remote sensing expertise — are ready for immediate download or accessible via APIs in support of a system-level integration. There is no place in the world that LuxCarta can't illuminate with BrightEarth.

### For more information:

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