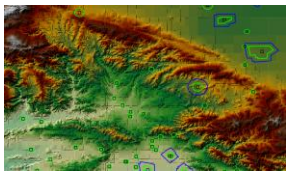
IO Data

Geographical and aviation data for embedded and avionics systems

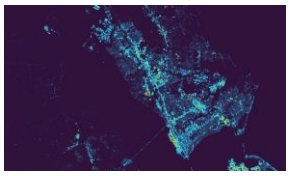
IO Aero builds mission data, pilot tools and assured autonomy for aircraft. IO Data is the data layer: the maps your aircraft and mission systems need, compressed to the error tolerance you set.



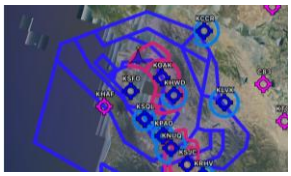
Terrain



LiDAR surface map



Emergency landing risk map



Aviation data

DATA PRODUCTS

Terrain
1 arc-second, TanDEM-X derived, void-free worldwide elevation models, or LiDAR derived surface maps (where available). Delivered as DTED, GeoTIF, or compressed.

LiDAR surface maps
Buildings, trees and towers kept. Over 80% of the US mapped; strong Canadian and Western and Northern Europe coverage.

Emergency landing risk maps
Expected loss to aircraft, people, and property, scored to your aircraft. 5 m or 1 arc-second.

Airports
Runways, taxiways, frequencies, elevation, type and use. Full detail for the US, Canada and Brazil available now, other data coming soon.

Airspace and obstacles
Military and civilian airspace; FAA and LiDAR-derived obstacles. US and Canada available now.

Weather
METARs, TAFs, and winds and temperatures aloft. Real-time and historical.

Custom maps
Combine land cover, population, powerlines, buildings and more into one map for your mission.

Your own data
Send us data you already hold and we compress and verify it the same way.

COMPRESSED TO YOUR ERROR TOLERANCE

- **You set the error tolerance.** Choose the maximum vertical error for the whole map, and tighter values over any area you choose (e.g. around airports or in your operational and/or test areas).
- **Every tile verified.** Each tile is decoded with the production C++ decoder and checked against its source before release.
- **Balanced or conservative.** Every post within ±B of its source, or never below source.
- **Standard output.** Your system reads standard DTED. Download, stream, or carry a packaged dataset offline.

OFF-THE-SHELF FULL CONUS BUILDS

22.55 GiB of DTED Level 2 terrain delivered in:

142 MiB
30 m base with 5 m and 1 m airport zones (162:1)

1.04 GiB
10 m never below base with 5 m and 1 m airport zones (21.7:1)

16.64 MiB
All CONUS runways and obstacles as compressed vector maps

Built by the team behind F-16 Auto GCAS (2018 Collier Trophy) and ASTM F3269, the runtime assurance standard.

HOW TO START

Send us your area of operations. We return a verified sample on your terrain.

Enterprise, available now: custom regions and tolerances, fleet licensing, air-gapped delivery

Formats: compressed terrain, vector maps and risk maps, DTED, GeoTIFF, KMZ

Delivery: Bundle download or file streaming

sales@io-aero.com · io-aero.com

IO Data is part of the IO Aero suite alongside IO Pilot and IO Intelligence.

Airborne or terrain-avoidance use requires an Enterprise agreement. IO Data software and data are subject to United States export control law, and all orders are screened.