

Geodesy: Making modern life possible

Geodesy is actively enabling the technologies and services people use every day.

Geodesy everywhere

From navigating with your phone to building bridges and managing disasters, geodesy provides the positioning, timing, and reference information that modern society depends on. Every time you use a map, follow a navigation route, take a train, or send a message, you may be relying on geodesy.

Where do you encounter geodesy?



Finding your way

Your smartphone uses GNSS positioning to show your location, find a nearby restaurant, calculate a route, or guide you to your destination.



Getting from A to B

Car navigation, aviation, shipping, railways, and public transport rely on accurate position and timing to keep people and goods moving.



Building and construction

Surveyors use geodetic coordinates and heights to position buildings, roads, bridges, tunnels, and utilities accurately.



Growing food

Farmers use precise positioning for guidance, automated machinery, and precision agriculture, helping reduce fuel, fertilizer, and water use.



Delivering goods

Logistics companies use positioning to track vehicles, plan routes, and deliver packages to the right place.



Keeping systems connected

Precise geodetic timing helps synchronize mobile networks, power grids, financial systems, and digital infrastructure.



Watching our surroundings

Geodetic measurements help detect land movement, subsidence, flooding, and changes in sea level, supporting safer communities.



Managing land

Geodesy is essential for accurate positioning for land boundaries, property lines, infrastructure projects, land use planning, development, and tenure security.

The common foundation

Behind these everyday applications is a simple need:

Knowing Where · Knowing How High · Knowing When

Geodesy provides the accurate position, height, and time reference that allows modern technologies and services to work together.

You use geodesy every day, often without even knowing it.

Through the **International Association of Geodesy (IAG)** and its **Global Geodetic Observing System (GGOS)**, the global geodetic community works together to provide the measurements, reference systems, services, products and essential geodetic variables that help science and society understand our changing Earth and build a safer, more resilient world.



<https://geodesy.science/ggos/>