Government of Canada
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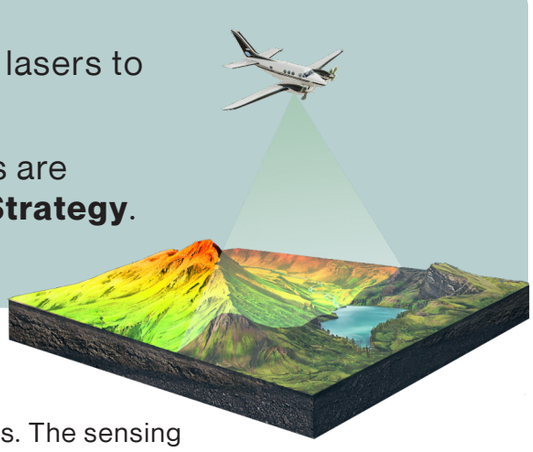
LiDAR (Light Detection and Ranging)

This is a remote sensing technology that uses lasers to collect very accurate land elevation data.

At Natural Resources Canada, LiDAR products are acquired under the **National Elevation Data Strategy**.



Why use it?

LiDAR data are extremely accurate, down to a few centimeters. The sensing technology can even pass through vegetation, such as tree canopy, to measure the ground beneath.

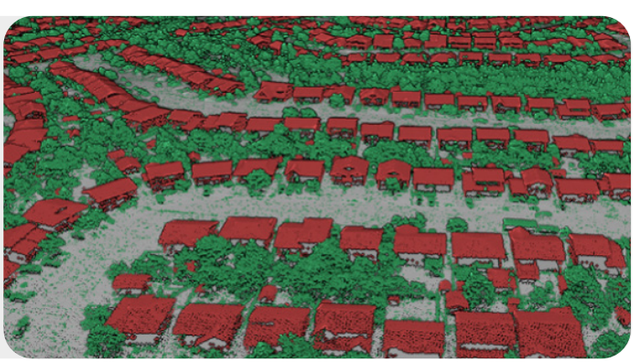
Elevation data area are key information for many applications: flood mapping, forestry, geohazard monitoring, route planning, and urban management, and also contribute to climate change science.

How does LiDAR work?

1. From an acquisition platform such as an airplane or a helicopter, a LiDAR system sends pulses of light towards the ground. This can be up to millions of pulses per second!
2. The LiDAR sensor records the time it takes the light pulses to return.
3. We calculate the distance between the LiDAR sensor and its target by using the speed of light and the flight time of each pulse. The millions of points collected can create a LiDAR point cloud that can be used to create high-resolution elevation data products.

Access the data

LiDAR Point Clouds



Aussi disponible en français sous le titre : Lidar (détection et estimation de la distance par la lumière).

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