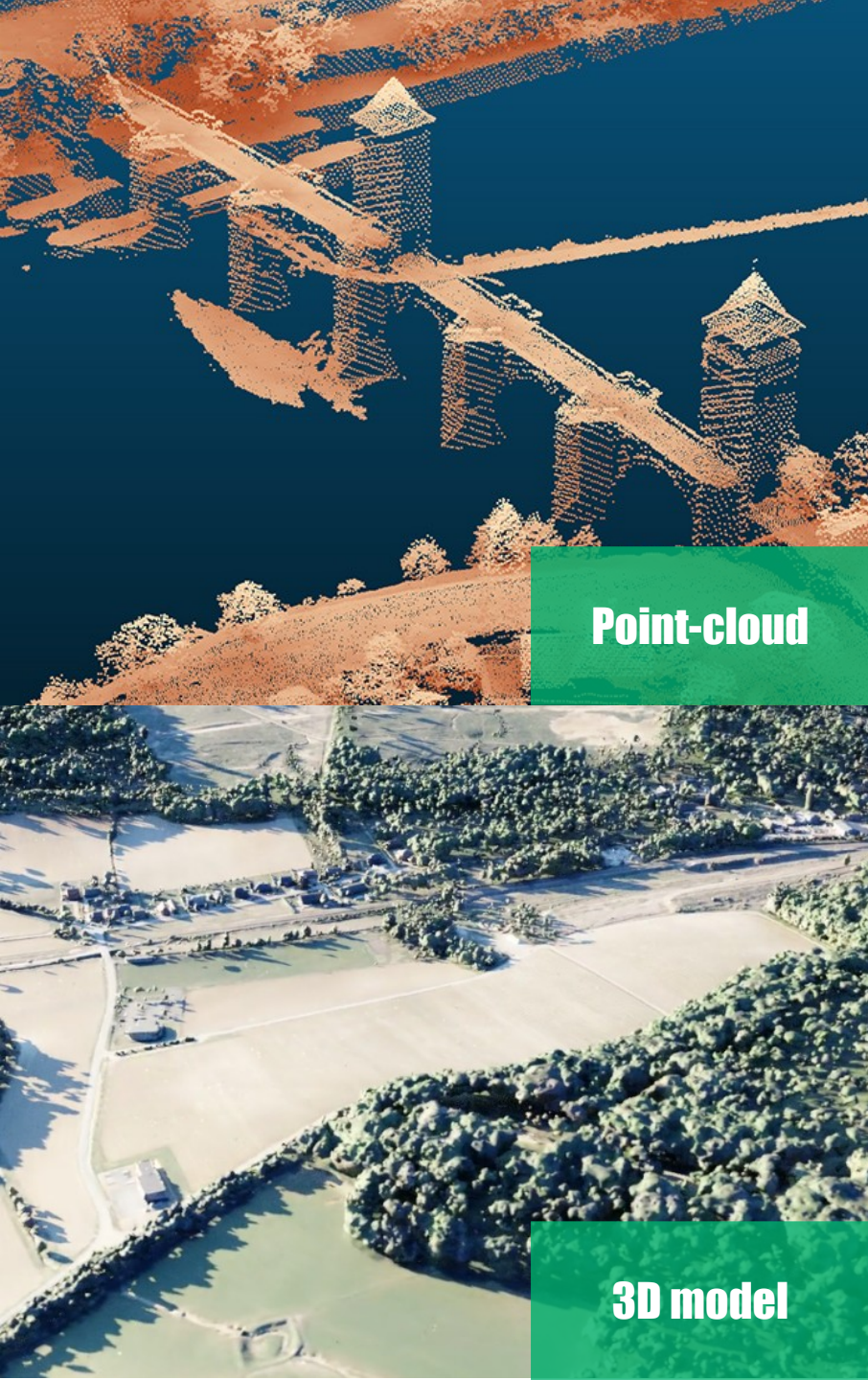




IGN – FRENCH NATIONAL LIDAR HD PROJECT

GEOSPATIAL WORLD FORUM 2026

WHAT DOES THE FRENCH NATIONAL **LIDAR HD** PROJECT CONSIST OF ?



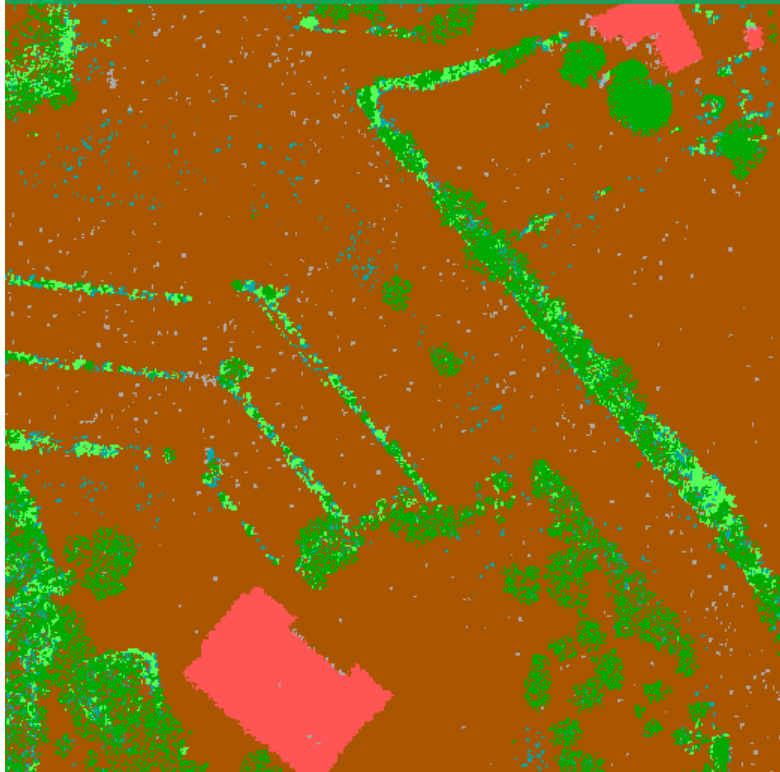
Point-cloud

3D model

1. Acquiring **high-density LiDAR point-cloud data** and transforming it into a **high-resolution 3D model** of France
2. Covering the **entire territory** to describe terrain elevation, vegetation, man-made features, and infrastructure
3. Providing a precise and consistent geospatial reference as **open data** for national needs and initiatives
4. User support

DIFFERENT DATA LAYERS

3D CLASSIFIED POINTS



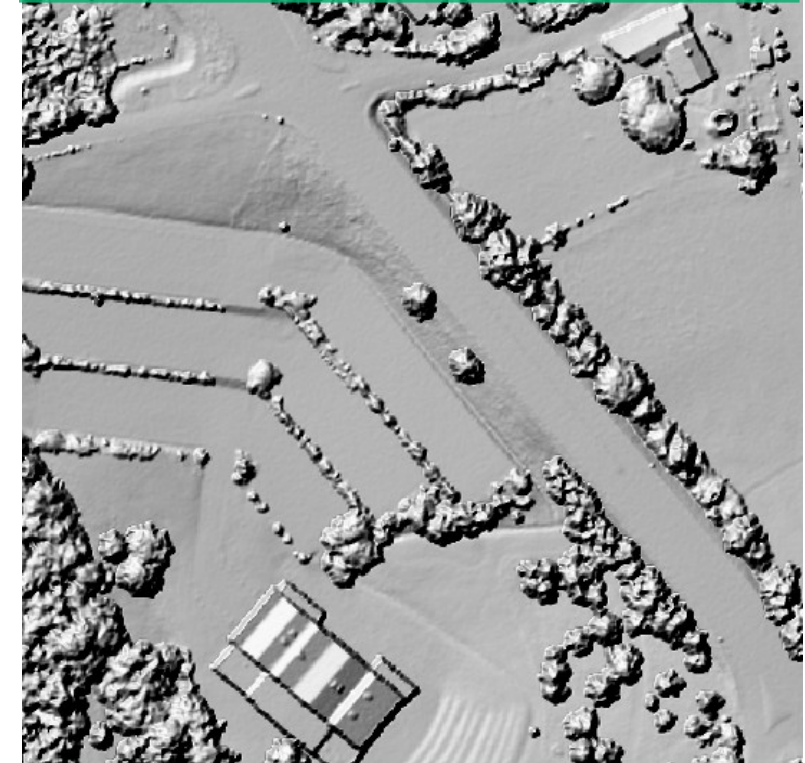
3D points, each **classified** as ground, vegetation, buildings, water, bridges, or other structures

DIGITAL TERRAIN MODEL (DTM)



Ground surface without above-ground features
→ **ground only**

DIGITAL SURFACE MODEL (DSM)



Surface with all above-ground features
→ **ground + all features**

KEY FIGURES

€60 million
budget, including R&D

7 years
2020-2027

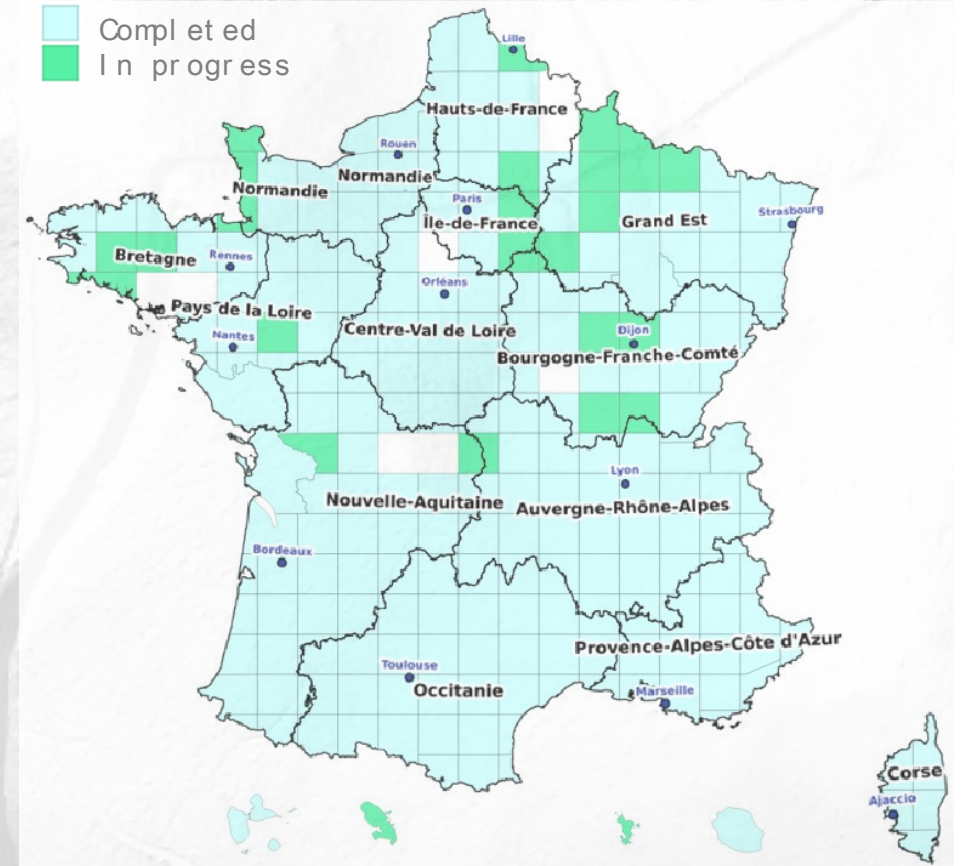
7000
flight hours

10+ points/m²
minimum point density

14,000
billion
3D points generated

10 cm
vertical accuracy

50 cm
planimetric accuracy

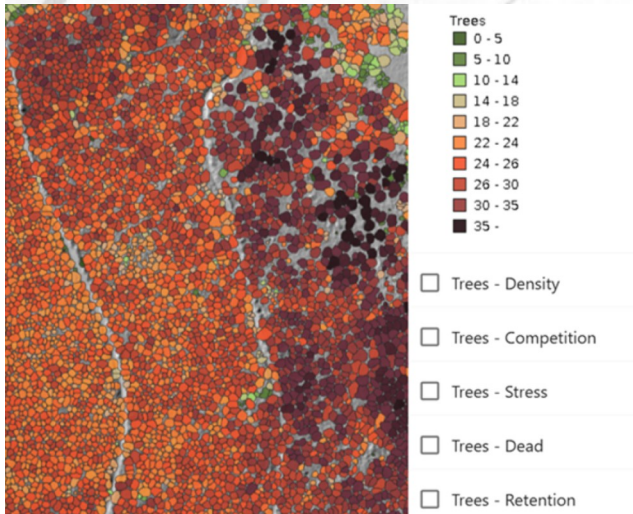
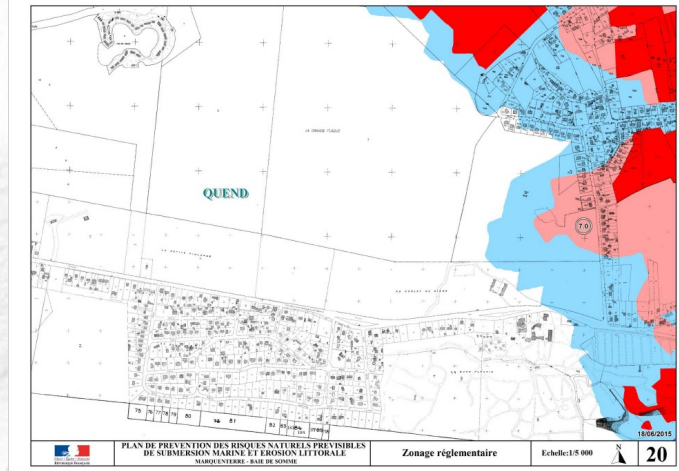


535,000 km²
already acquired
5% remaining

MAJOR NEEDS

Prevention of **natural disasters**
(flooding, landslides, etc.)

Improved knowledge of
forest resources



... and **many other uses: digital twin, architecture, archeology, and more**

Agriculture: monitoring of the EU Common Agricultural Policy



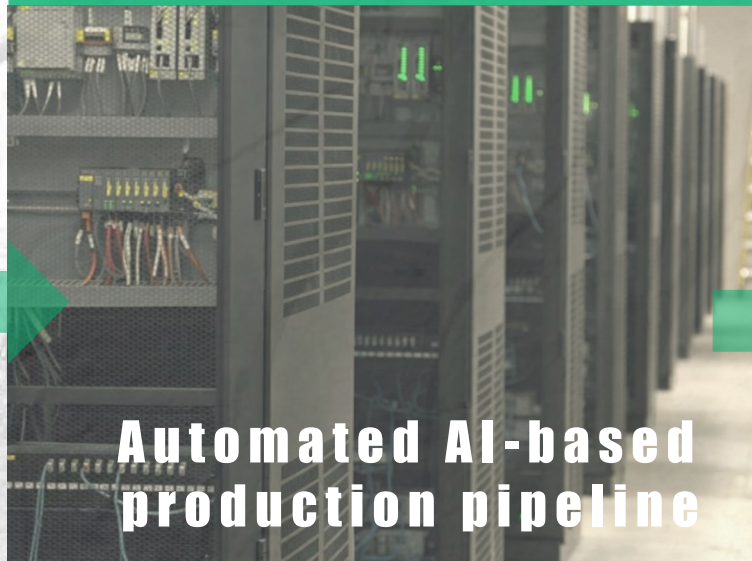
PRODUCING LIDAR DATA END-TO-END WORKFLOW

AIRBORNE ACQUISITION



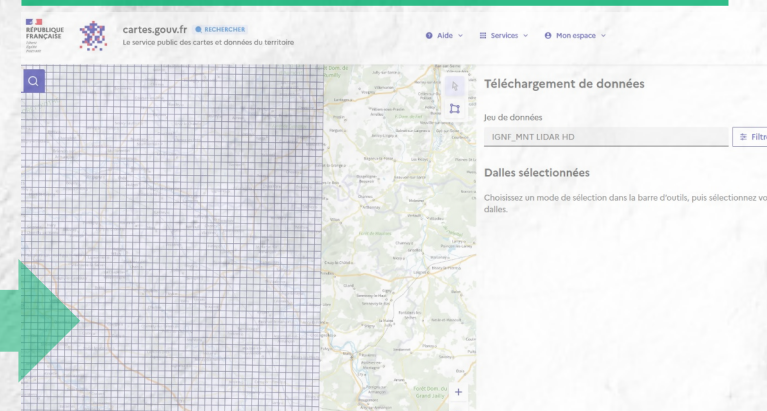
- Emission of laser pulses toward the ground
- Detection of the reflected signal
- Generation of billions of 3D LiDAR points

CLOUD POINT PROCESSING



- Classification of each LiDAR point into semantic classes (ground, buildings, vegetation..)
- Computation of high-resolution 3D digital models

DATA DELIVERY



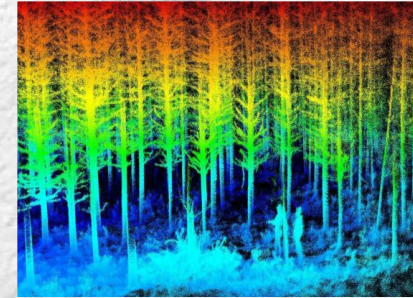
- OPEN DATA delivery from the IGN national platform
- Géoplatforme
- cartes.gouv.fr

LIDAR HD UPDATE

Combine LiDAR and aerial imagery acquisitions to improve detection and 3D modeling

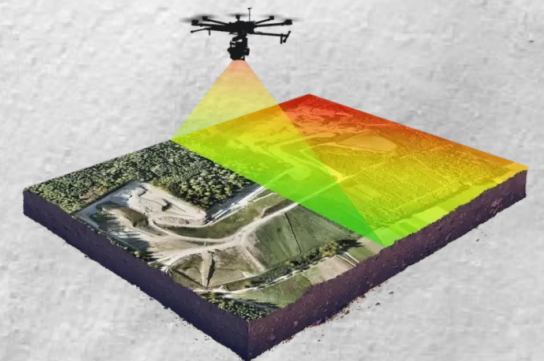



Enhance automatic classification with stronger AI-based workflows



Adapt point density and coverage to specific user needs and priority areas

Reduce environmental impact with low-emission or slow-flight vectors (drones, airships)





**THANK YOU FOR YOUR
ATTENTION**