

CHANGE DETECTION IGN ROADMAP

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16/01/2026

Change Detection for optimizing production processes and mapping the Anthropocene

3 Main Objectives of the Roadmap :

1. Optimisation of the production pipelines

1. Automatic change detection methods
2. Targeted updates and acquisition
3. Long-term : data fusion and multi-source integration

2. New products related to temporal phenomenon

1. Costline
2. Forest (health, deforestation and essence distribution, etc)
3. Wastelands
4. Etc

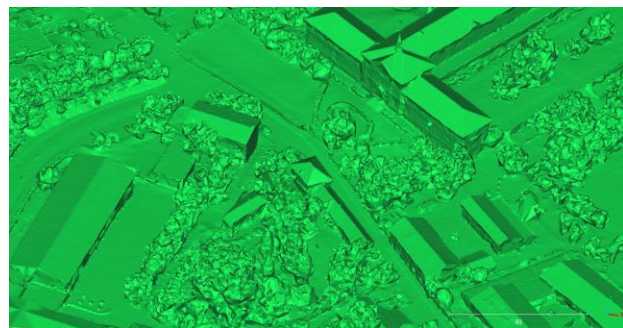
3. Products for monitoring territorial dynamics

It also involves developing new **industrial, institutional, and research partnerships** on these topics and increased **collaborative data production** for and by change detection.

The Institute works on all these dimensions simultaneously, at various levels of involvement, from research and innovation up to production.

Various kind of data

- Image
- 3D
- GNSS
- Textual data
- Vector data



Avis n° 23-19517

Publié le 9 février 2023

Date limite de réponse le 07/04/2023 à 12h00

Construction de deux ouvrages hydrauliques en Remblai à Beaugies-sous-Bois et Berlancourt (60)-.

DÉPARTEMENT : 2 60

ACHETEUR : ENTENTE OISE AISNE

TYPE D'AVIS : Avis de marché

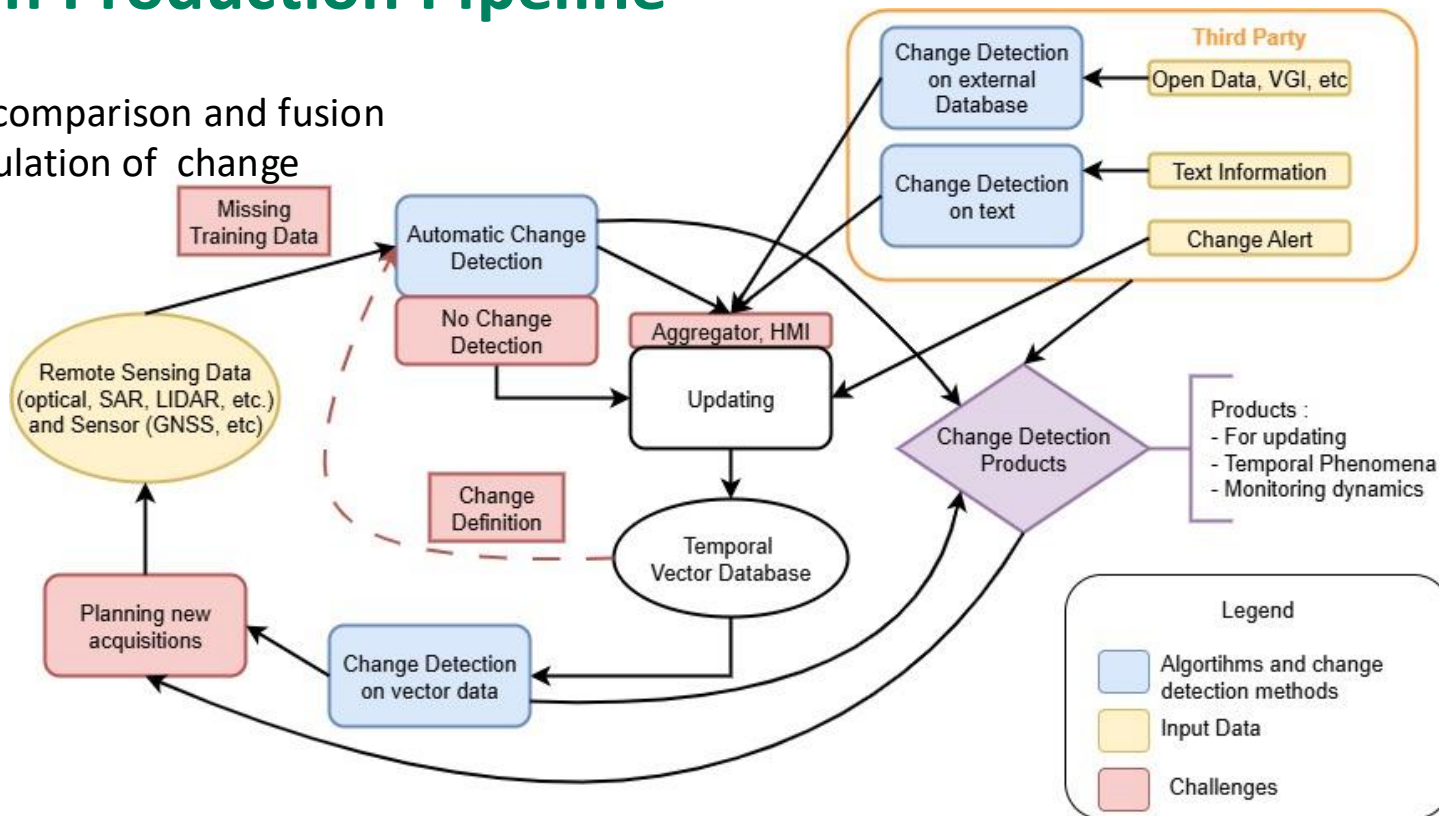
PROCÉDURE : Procédure Ouverte



Challenges in Production Pipeline

Other Challenges :

- Multimodality : comparison and fusion
- Prediction / Simulation of change



Annexes

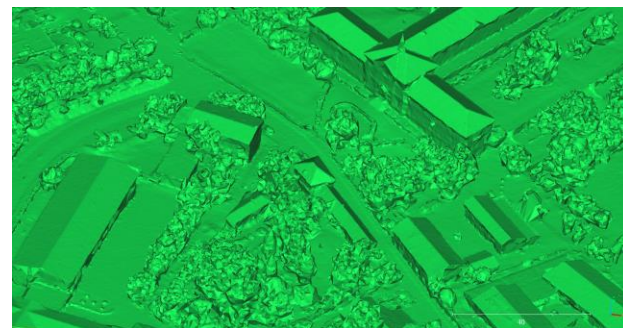
Various technological challenges

Image :

- Change detection very high spatial and semantic resolution
- Uncertainty estimation
- Natural disasters and post-crisis damage assessment

3D : Change detection / uncertainty estimation / Mesh fusion

GNSS : Break detections / activity traces



Various technological challenges

Change detection in **Textual data**

Vector data :

- Spatio-temporal database (theoretical and operational challenges)
- Aggregation methods
- Data matching and managing database evolution

Multimodality :

- Detection of change in long time series
- Change detection and fusion between heterogeneous remote sensing sources
- Cross-referencing of multi-modal information (text, images, LIDAR, vector databases)

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Various technological challenges

Optimal acquisition strategy (aerial, spatial or terrestrial)

Visualization of change information

Prediction / Simulation of change