

Arcep examples of mapping broadband infrastructures and services

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Context

french regulatory framework

Key elements in designing the regulatory framework

FttH : technology of choice of all French operators for NGA since 2006

- Cable footprint below 30% and Copper network upgrades poorly (sub local loop too long)

A competitive outlook which structured the FttH regulatory framework

- Strong presence of fixed alternative operators at the local level
- Market consensus for passive access

A fully convergent market : 4 fixed-mobile operators, investing in their own network

- Orange, SFR, Bouygues Telecom (historic MNO, active on the fixed market since ~2008), Free (historic FNO, became a MNO in 2010)

A pro-investment regulation in fixed networks

A hybrid regulatory framework

- Asymmetrical on existing infrastructures : aiming at building a level playing field for fibre rollout
- Symmetrical on fibre termination: access and co-investment obligation in the last “drop”

Clarification of deployment conditions, with defined responsibilities

- Very dense areas, where there is a concurrence between private operators (incumbent and alternative ISPs)
- Less dense areas, where some private operators are engaged towards the Government in urban zones and local authorities have initiatives in rural zones

Mobilization of stakeholders for the deployment of very high speed networks

- + 3,2 M of premises passed in 2018 and more than 4 M expected in 2019 (FttH)

Symmetric rules for fibre vary with area density to strike the balance between competition and costs

Set of obligations imposed on the operator deploying the last segment of the network

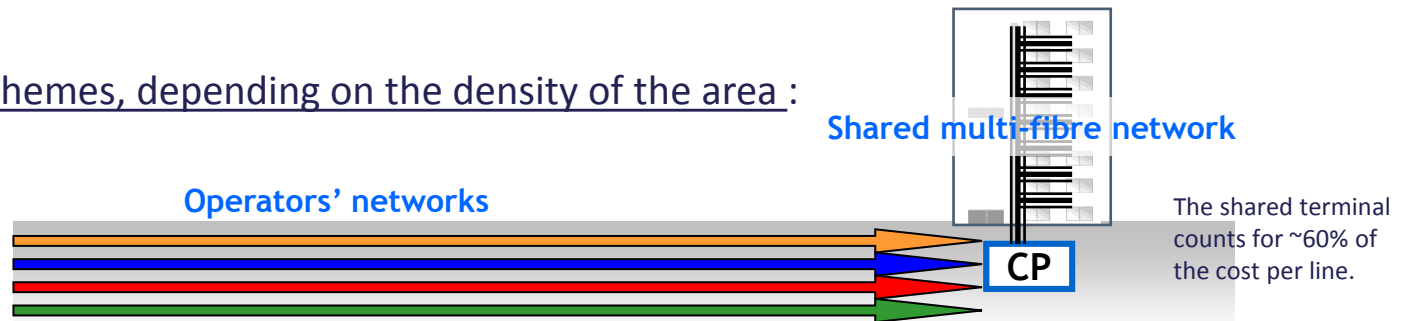
- Provision of passive access at a concentration point
- Publication of an access offer including co-investment & line rental options
- Access prices based on principles of non-discrimination, objectivity, relevance and efficiency
- **Structured exchanges of technical information with commercial operators**

Flexible setting fit for all fibre local loop operators: incumbent, alternative ISPs, local authorities

Two sharing schemes, depending on the density of the area :

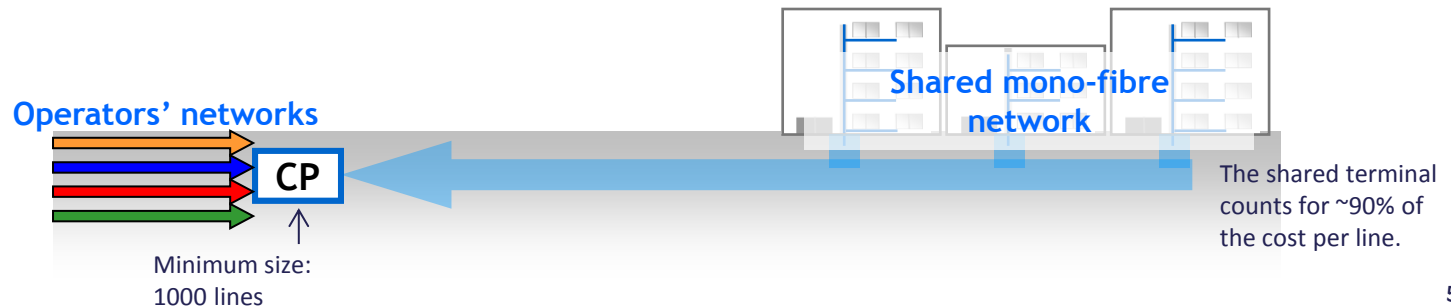
Very dense areas :

(6 M premises)



Less dense areas :

(30 M premises)



Transparency and monitoring through data collection and publication as a regulation and pro-investment tool

Laws enable Arcep and normalizes required informations

- In 2018, Government gave Arcep the possibility to collect more broadband fixed informations from operators with publication of maps and datas

To better inform representatives and citoyens about broadband coverage

- At the local level (interactives maps)
- At the national level, indicators that give a global view of the sector
- All the underlying data are open on <https://www.data.gouv.fr/fr/datasets/le-marche-du-haut-et-tres-haut-debit-fixe-deploiements/>

To better control operators obligations

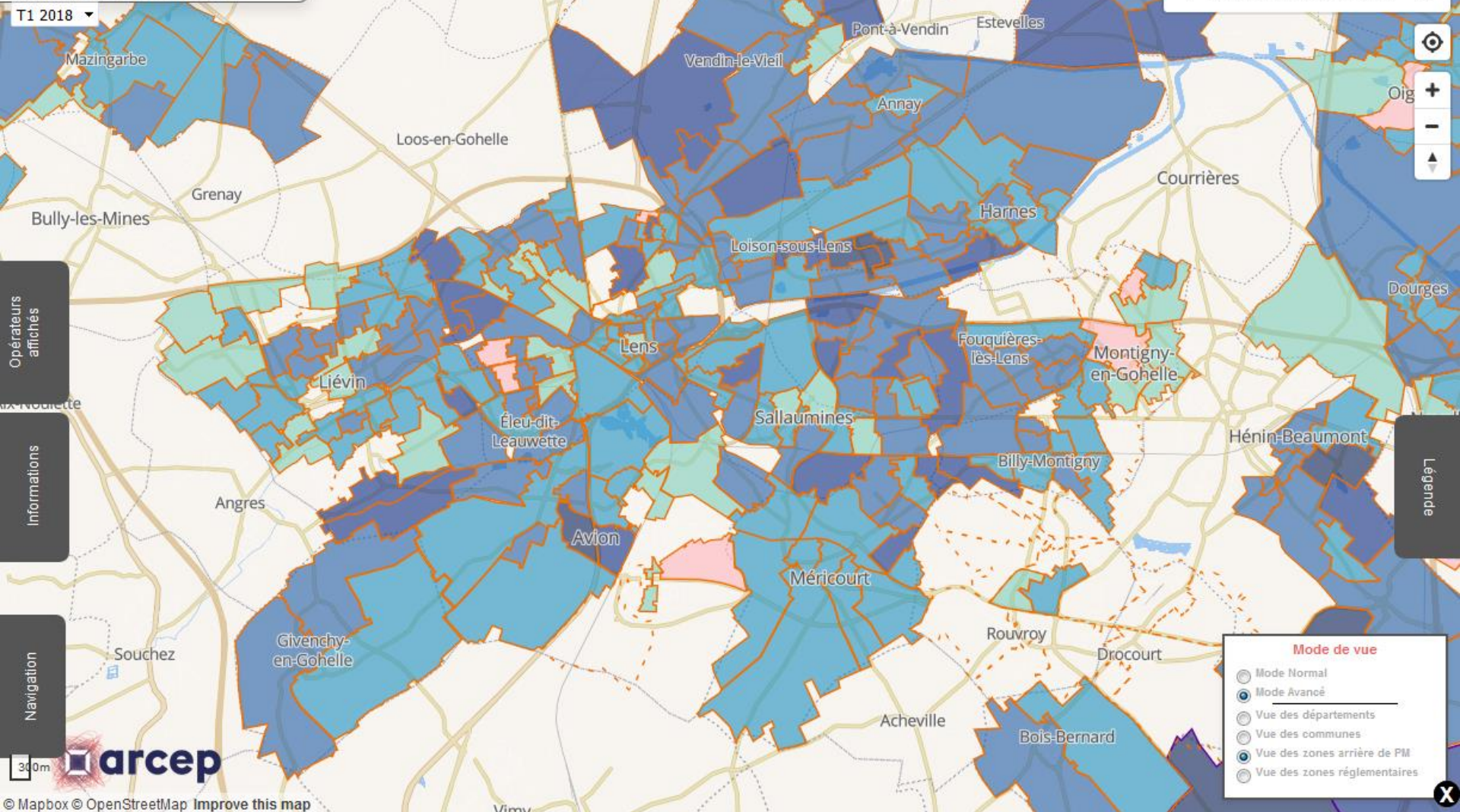
- Engagements taken by operators towards the Government
- Symetrical rules respect (size of zones, deployment timing, etc.)

cartefibre.arcep.fr

mapping FttH rollouts

FttH availability

Carte des déploiements fibre
Données au 31 mars 2018



A trimestrial collection

Enriched informations exchanged between deploying operators to commercial operators

- « IPE » and « CPN » tables : describing all FttH adresses with informations such as status (study, building, connectable), position (XY) or link with shared acces point and previous nodes

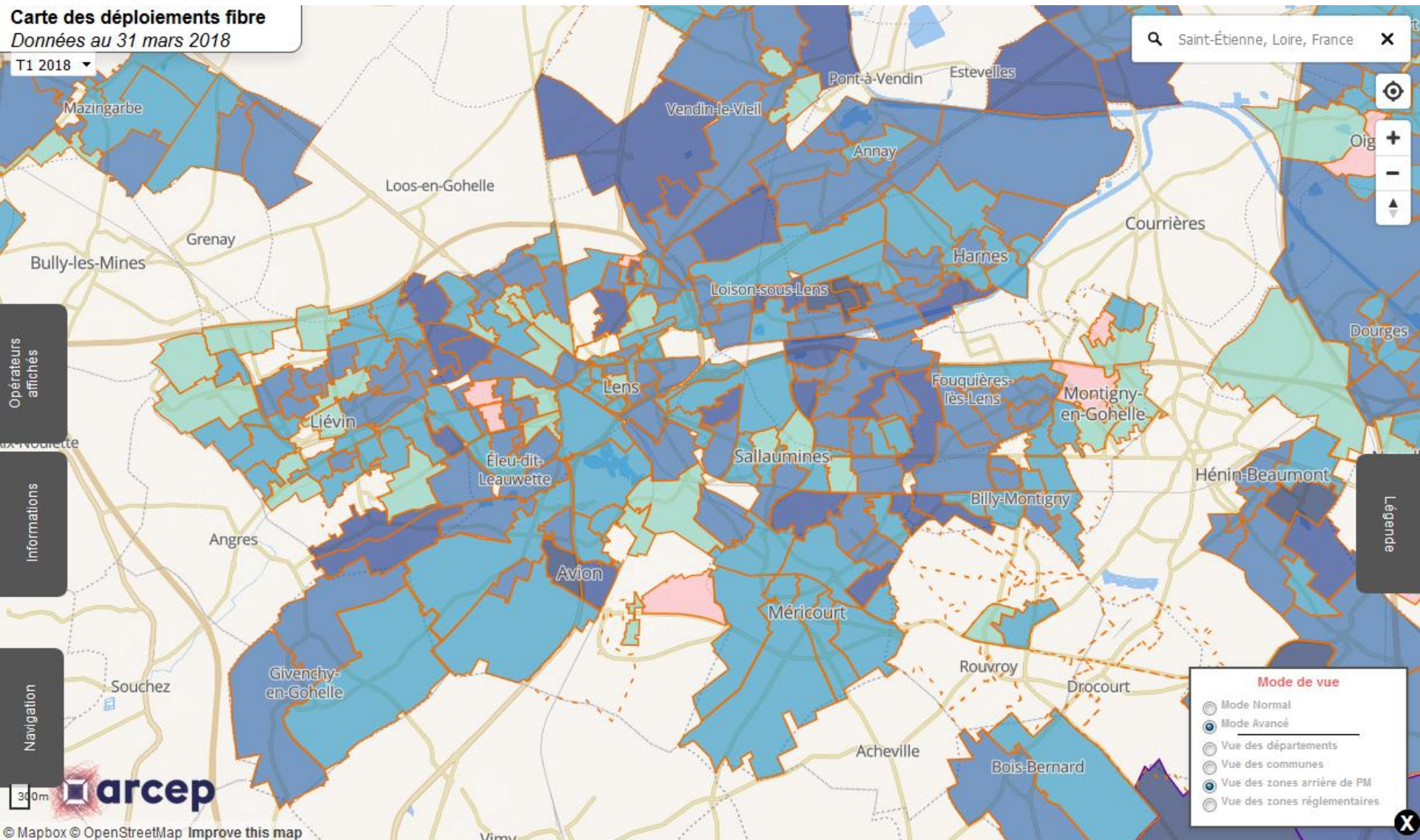
Coverage of deployment

- « ZAPM » shapefiles : to each shared access point is associated a zone which includes a list of adresses. These files describe the footprint of these zones with informations sush as operator or commercial opening date

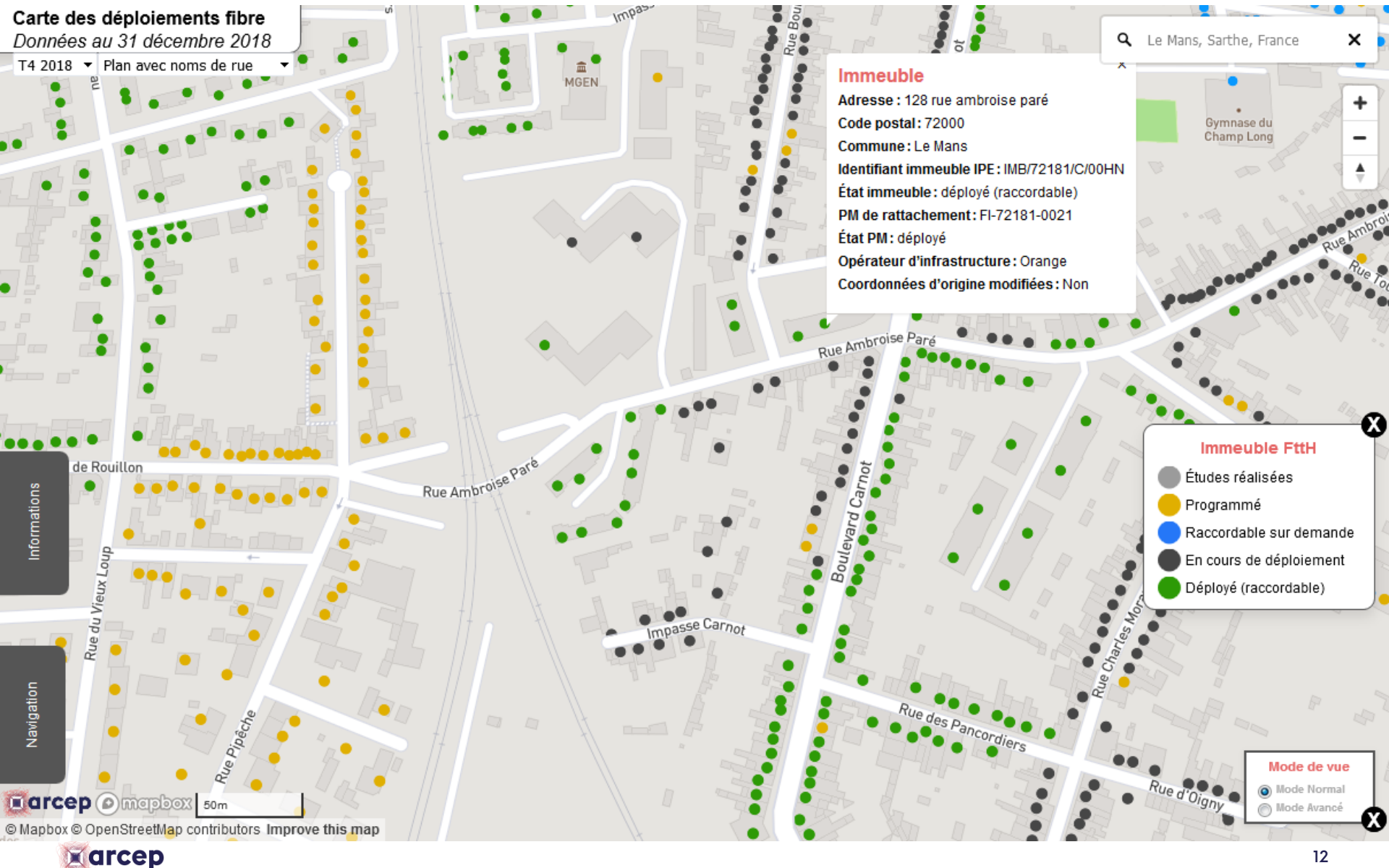
From all fibre local loop operators deploying or studying a deployment

- It requires a real collection campaign that combines discussions with operators and robust pre control

FttH coverage at the shared access point level



Informations at the buiding level



Rollouts forecast

Carte des déploiements fibre

Données au 31 décembre 2018

T4 2018 ▾ Fond de plan standard ▾

La Dorée

Code Insee de la commune : 53093

Zone réglementaire : Zones Moins Denses

Département : Mayenne

Déploiement : Début des travaux l'année prochaine

Type de projet : Public

Porteur du projet : Syndicat mixte ouvert Mayenne très haut débit

Site internet porteur du projet : <https://www.lamayenne.fr>

Nom de l'opérateur exploitant : Mayenne Fibre

Site internet exploitant : <https://www.mayenne-fibre.fr/>

Prévisionnel

- Travaux en cours ou terminés
- Début des travaux cette année
- Début des travaux l'année prochaine
- Début des travaux dans deux ans ou plus
- Informations en cours de collecte

La durée typique des travaux est de 12 à 18 mois

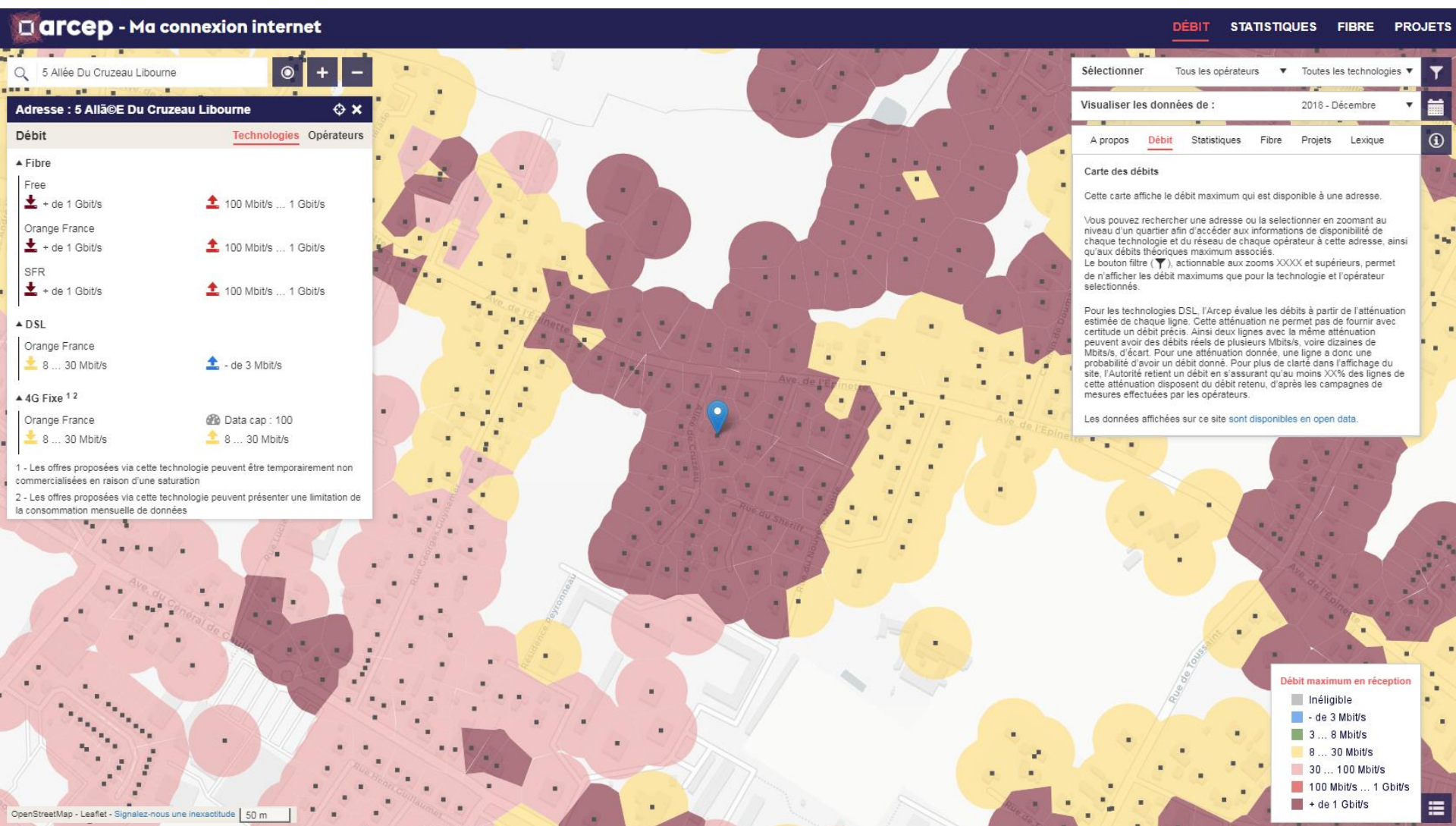
Opérateurs d'infrastructure

- Orange
- SFR
- Autres
- Réseau d'initiative publique
- ZTD / Haute densité
- ZTD / Basse densité

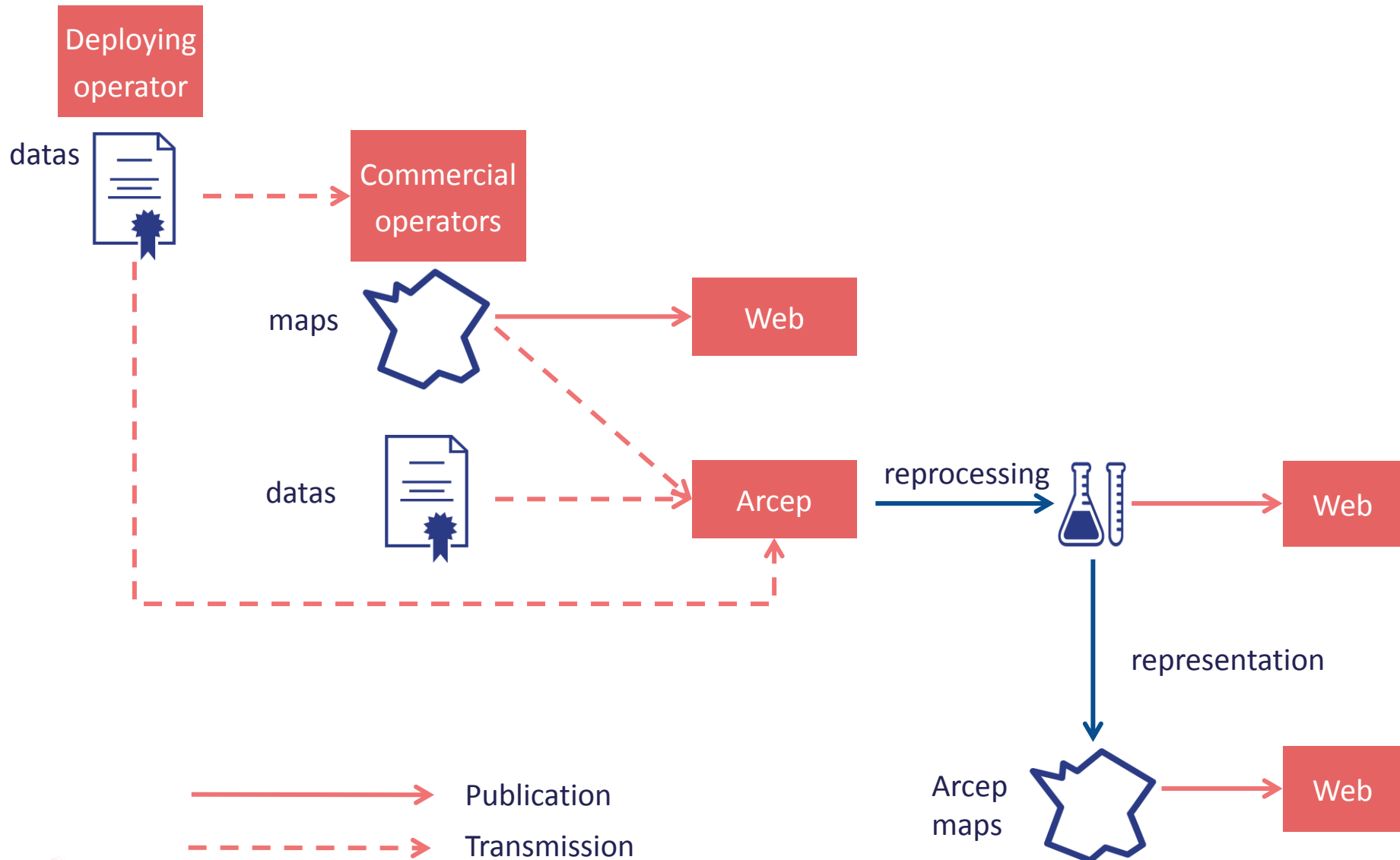
ma connexion internet

mapping fixed broadband services

Maps of broadband speed (up and down)



Collection and publication flows



Main fonctionnal assets

An online portal to collect datas and responsabilize operators

- Both commercial and deploying operators must upload their files each trimester.
- Necessary to industrialize the collection with the amount of concerned operators

A structured PostgreSQL/postgis database for data integration and restitutions production (cartographic, statistics, open-data)

- Links networks footprints, ISP presence at the networks nodes and reference inputs
- Its content is updated thanks to an ETL

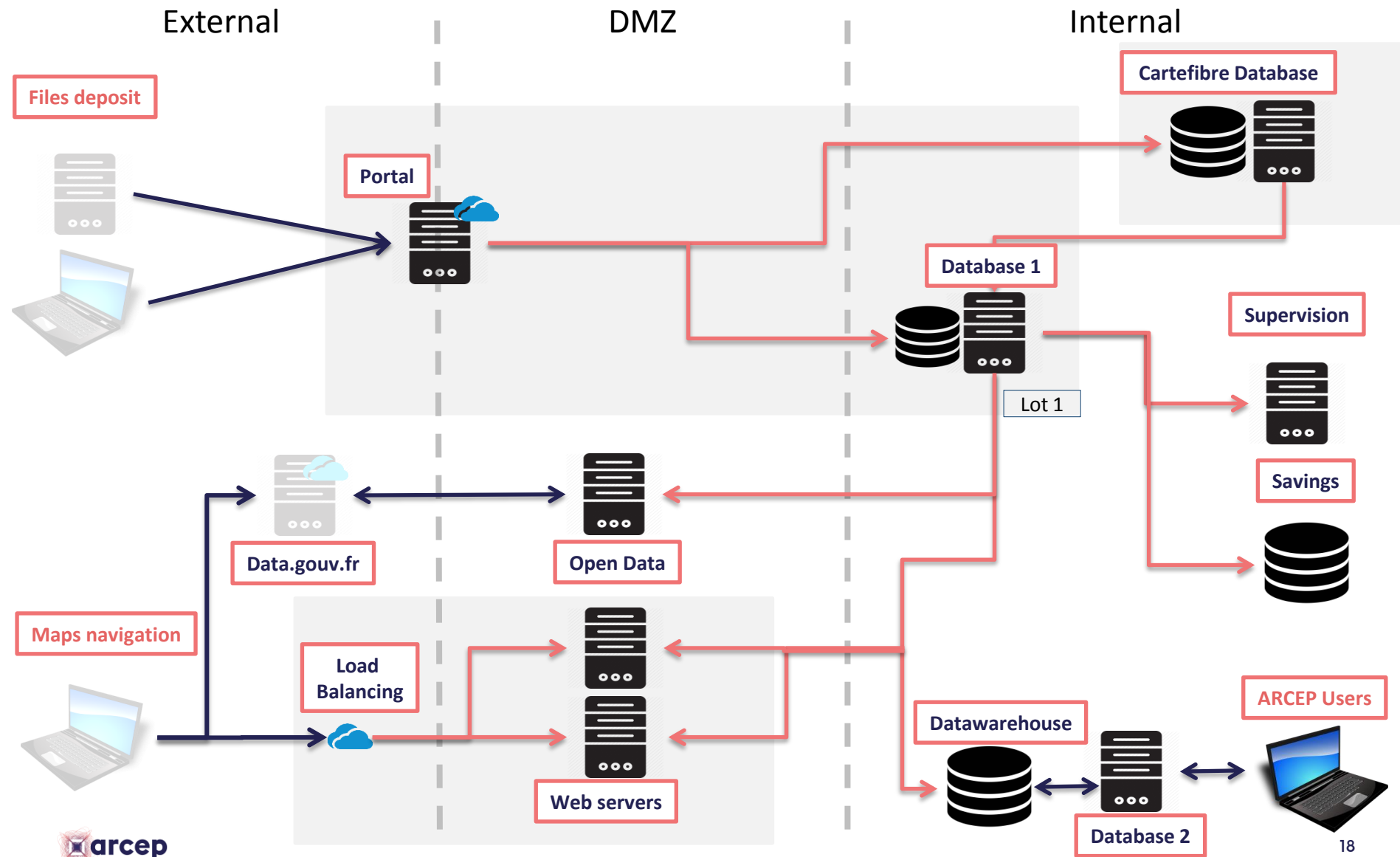


An application based on GeoServer that displays cartographic restitution

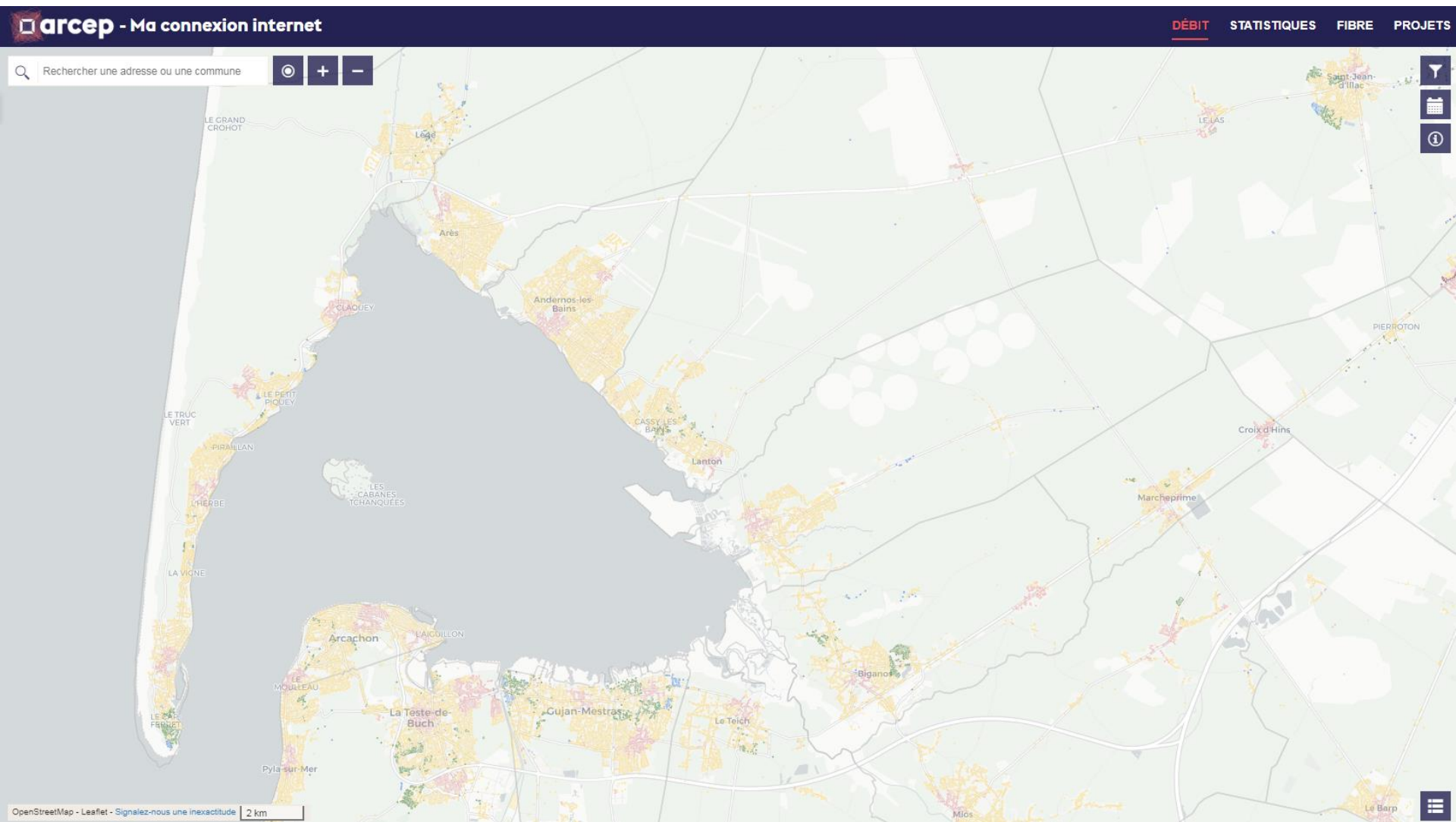
- With calculated Voronoi diagram for each building
- Storage of tiles to improve fluidity with GeoWebCache



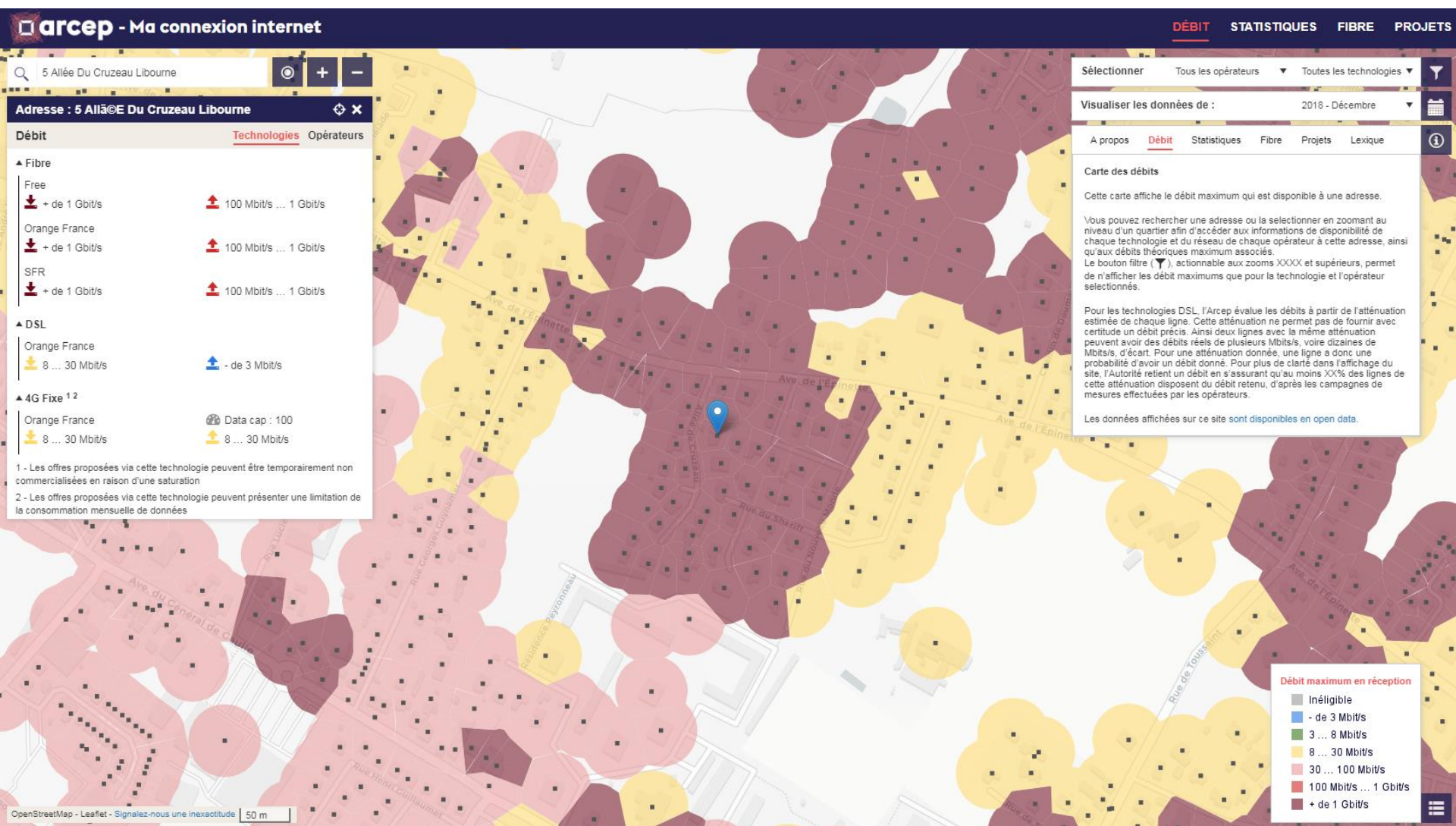
Solution architecture



ma connexion internet, overview



Speeds, access technologies and operators available at the building level



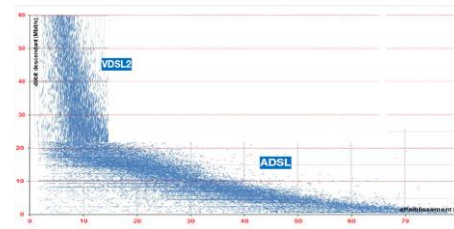
Main difficulties and complexity

Crossing multiple networks : operators may have their own way to identify a termination point

Buildings / addresses repository and premises count for statistics : trust only one input with the risk of missing informations or combine many and assume complexity



Modelize the copper network performance



Cartographic performance : dilemma between fluidity and storage use

Maintain reliable open data during the time and despite evolutions

Thank you for
your attention

Questions ?

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