


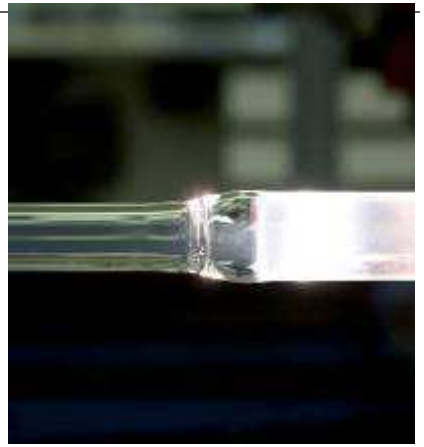



FttF, Fibre to the Farmyards: how to bring fibres to Rural Areas

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FibTic

Fibre to the Home Council Europe

FTTH Council fiber to the home

FTTH Council Asia Pacific

The paradox in the French market

Operators concentrate their efforts within dense areas

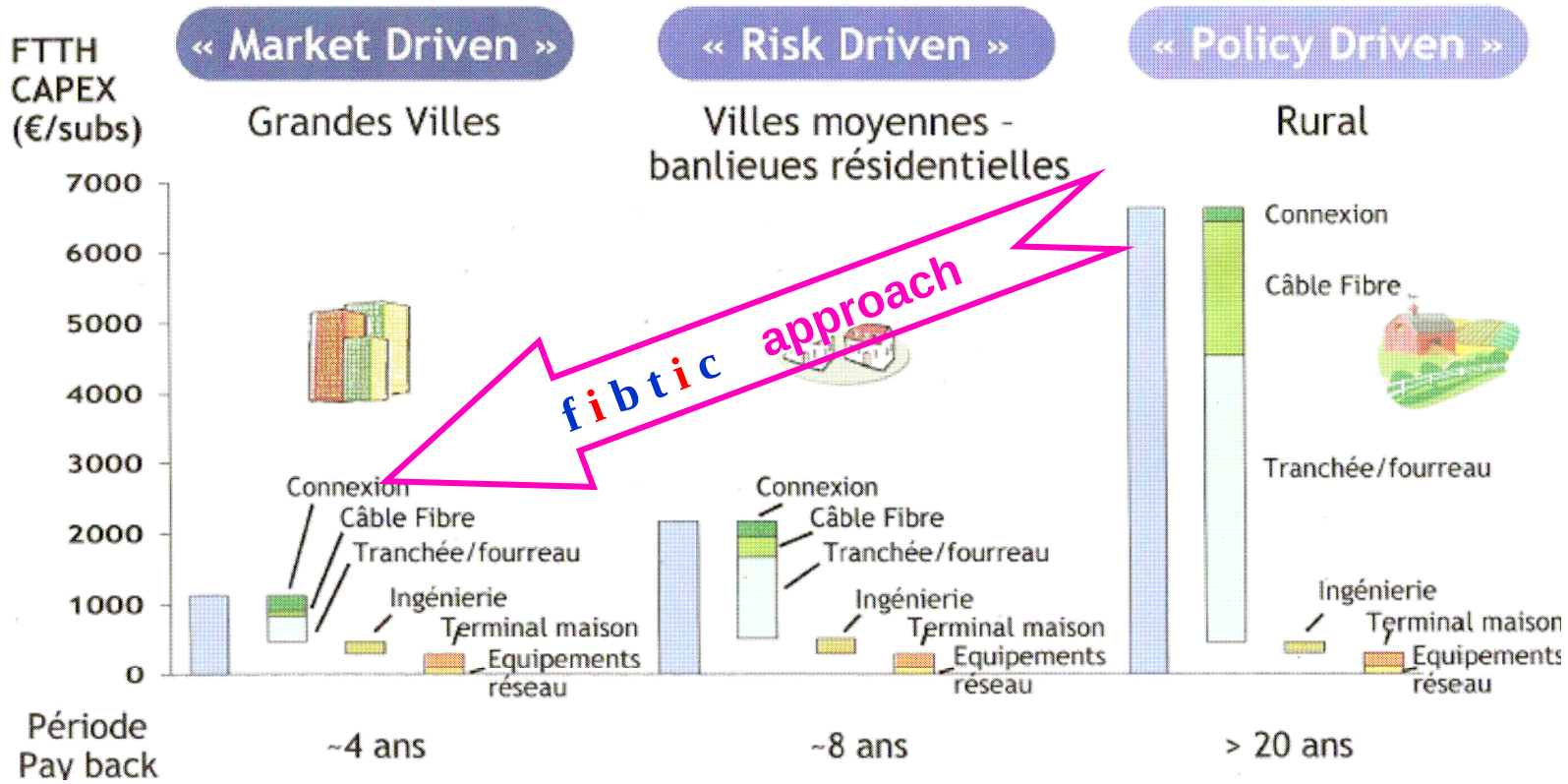
HOWEVER

- **#1: Marketing - Since 12 Mbit/s ADSL offer is available**
  ➔ low rate of FTTH adoption

- **#2: Technology – Long distance, up to 20 km where fibre should bring the most benefit, is not exploited**

CONCLUSION ➔ Rural should be the ideal segment for FTTH

Market Segments



Source Alcatel-Lucent

How to succeed ?

- **Simplified CIVIL WORKS with reduced costs**
- **Very high RELIABILITY**
- **Strong focus on PASSIVE INFRASTRUCTURE**
  - **Technology**
  - **Materials**
- **High degree of MUTUALISATION**

Nothing new under the sun…

- France: after World War I, electrification had to reach rural areas but… **low density of population didn't attract the Private Providers**

  In 1920 the **farming Communities** decided to **create ad hoc syndicates** considered as agriculture cooperatives called **SICAEs** (Sociétés d'Intérêt Collectif Agricole d'Electricité)

Energy

- Argentina : co-ops are in small, isolated communities in the south (Patagonia) where the **two operators**, had openly expressed that **they did not want to serve** those communities

- United States : **Independent Operators serve about 5%** of the US phone subscribers

  Today, a total of **225 cooperatives are a sub-group** of independent telecom providers.

Telecom

WHY can't the country folk make it happen for FTTH?

Why go Rural?

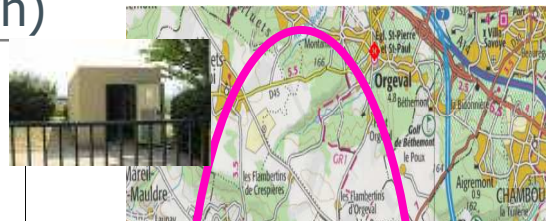
Why go Rural?

- Discourage people from migrating to large towns
- Maintain the number of farms and agricultural enterprises
- Relaunch the Agricultural Industry
- 1%-2% of growth of the rural segment
- Reduce transportation and oil consumption by teleworking usage
- Support the Medium/Small enterprises
- Sustainable development

Rural : GPON, the most common approach

To Datacenters
(applications & services)

Optical PoP
(Little town)

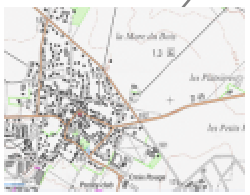


End-to-end Giga
Ethernet Connectivity

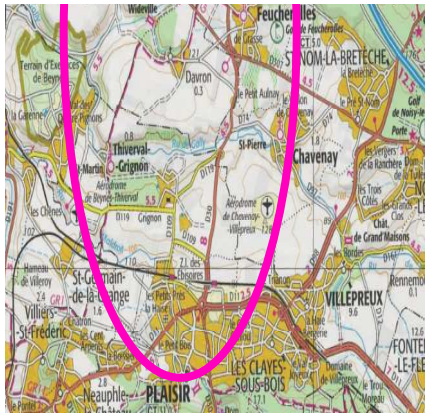
Isolated farms

splitters

A few kms

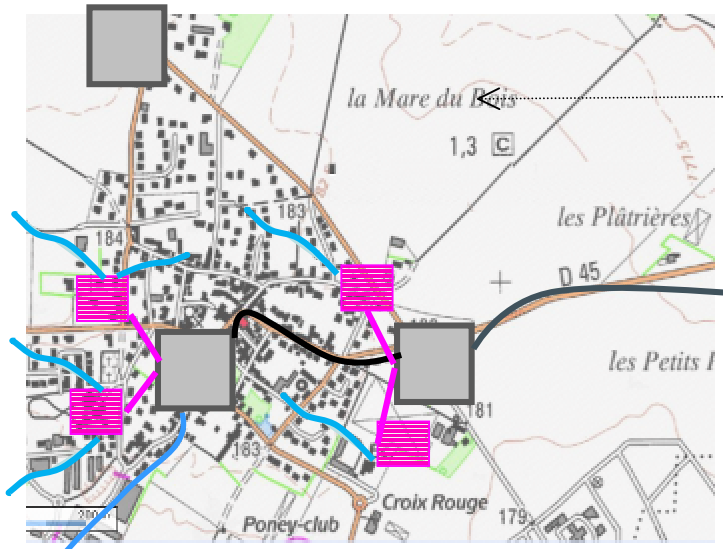


Villages, hamlets



Rural optical
Backbone

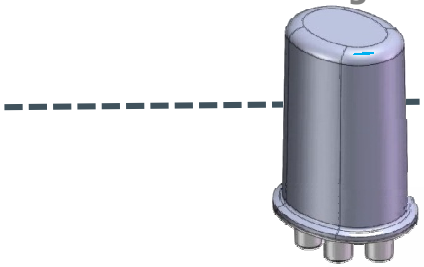
The basic scheme



1 to 5 km

2 to 15 km

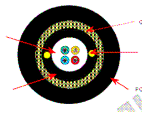
Intermediate Branching Closure



Low Cost Civil Work

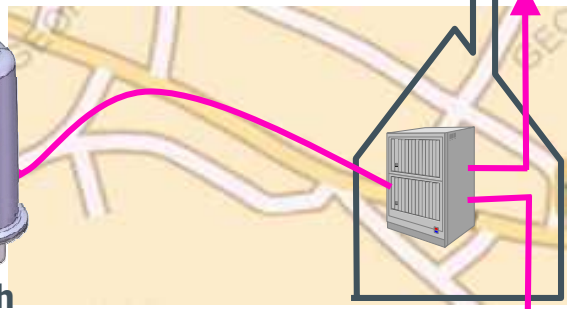
Rural Optical Backbone

4G-LTE Micro-station



Rural Feeder Cabling

Branch Closure



Optical PoP

Low Cost Rural Civil Work for Backbone and Distribution Networks

Source SatPlan

Cemagref
Sciences, eaux & territoires

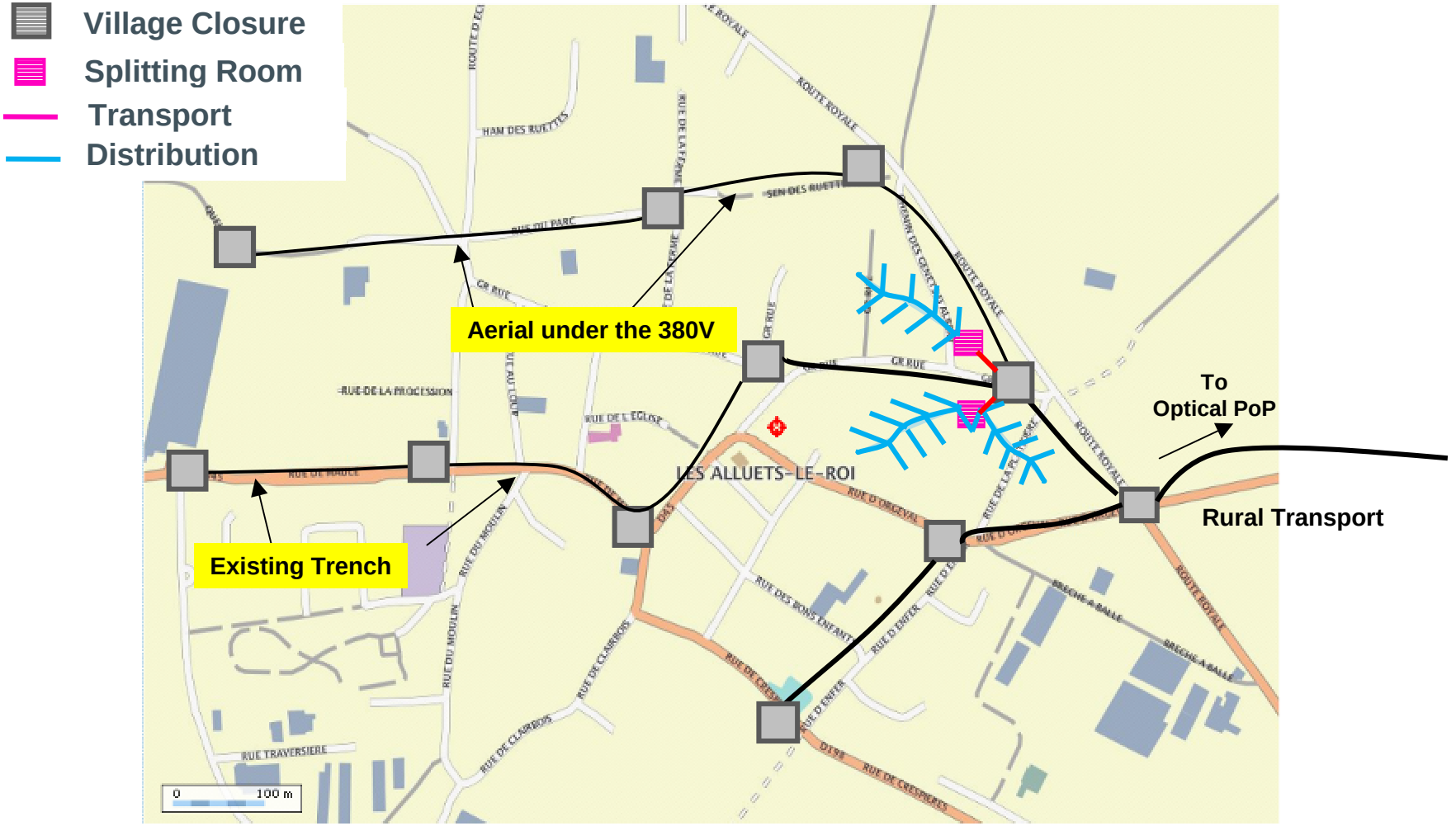
- **Highly accurate embedded positioning system**
- **DIRECT BURIED**
- **DUCTING only when necessary**
- **AERIAL when poles are already there**
- **Existing machinery**

Powerful Rural GIS

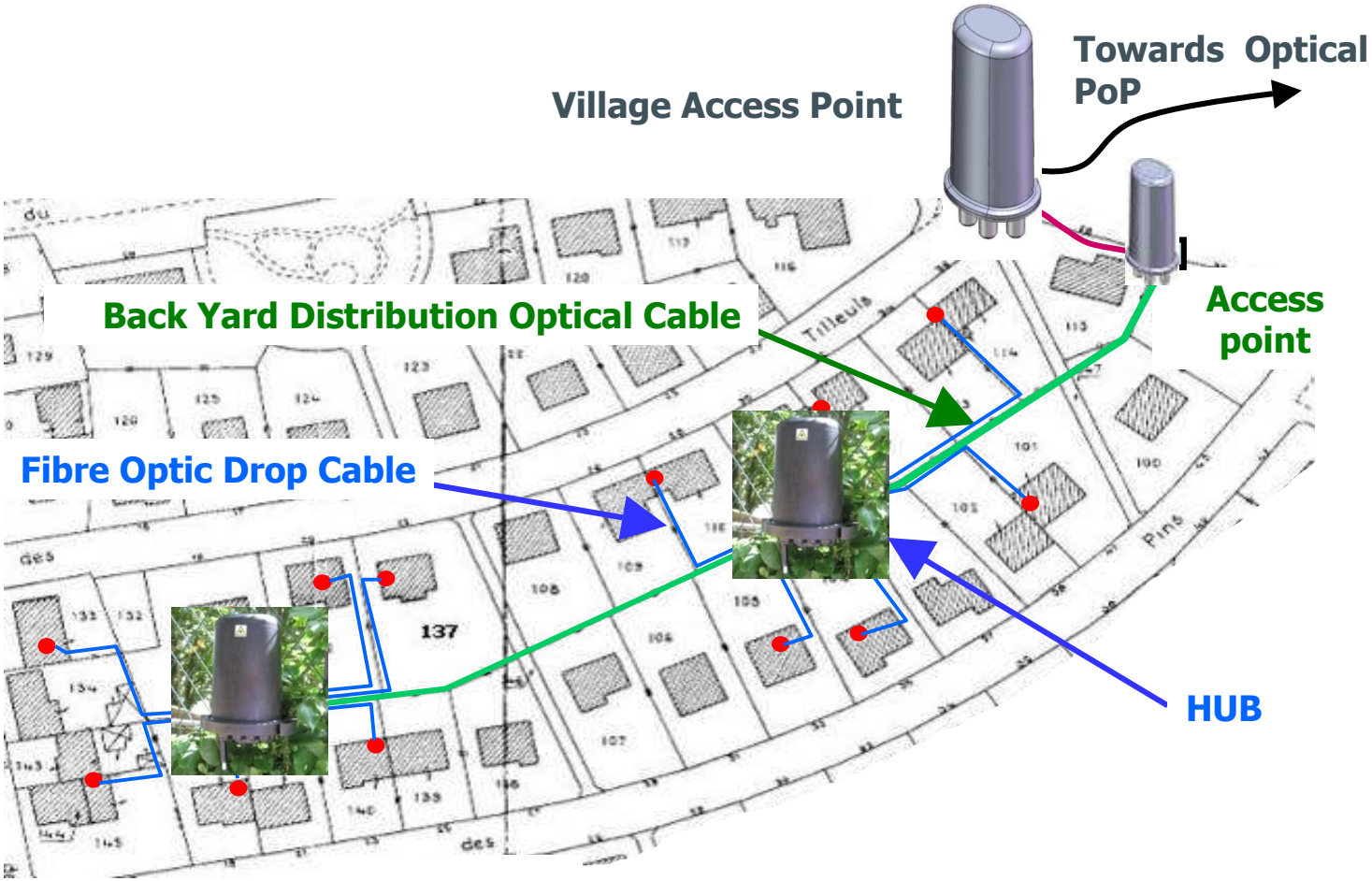
Deployment via rural paths or cultivatable area borders for backbones and distribution networks

Cable and accessories tracks stored with a 20 cm accuracy thanks to RTK (differential GPS) positioning system

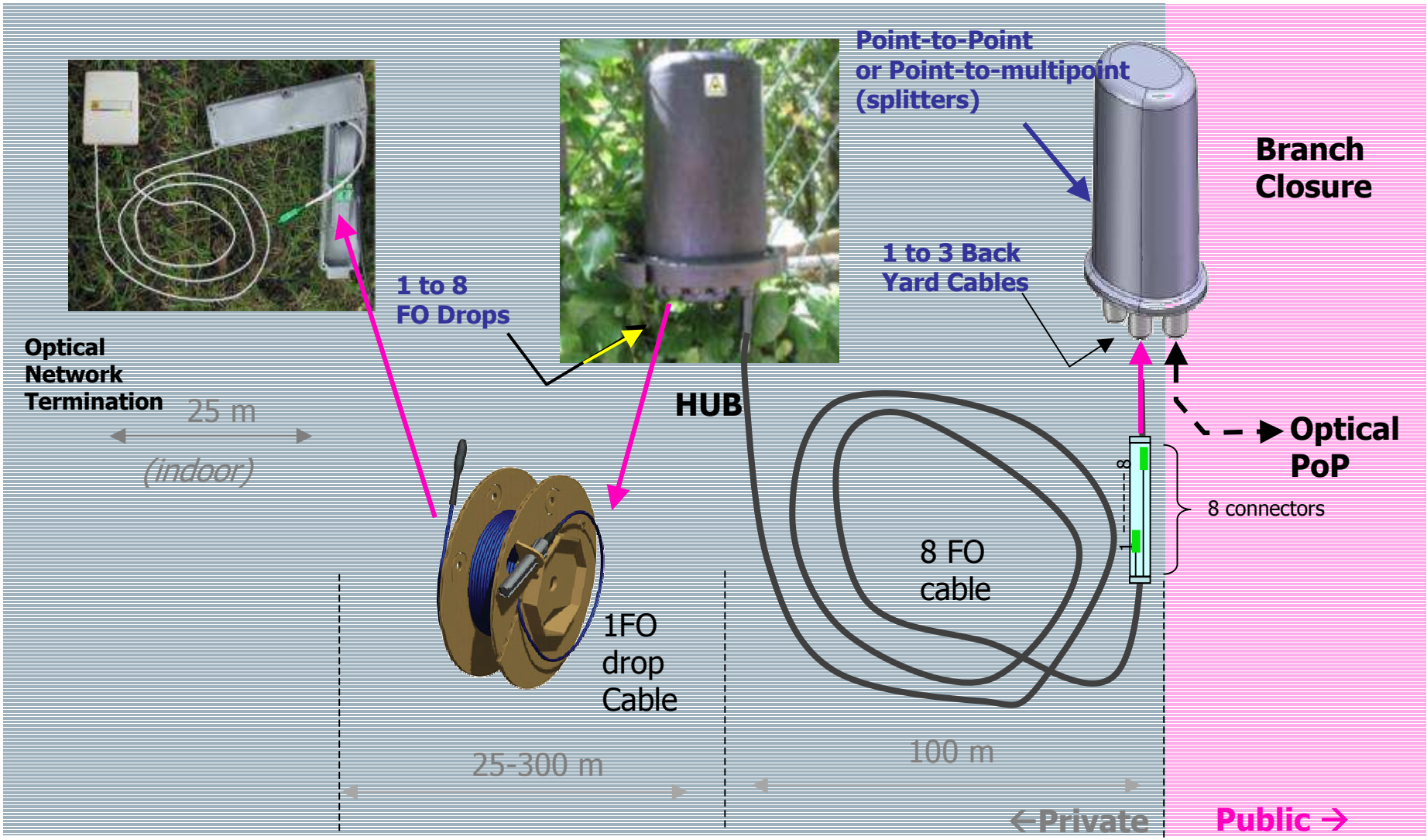
Local Network – Village Distribution



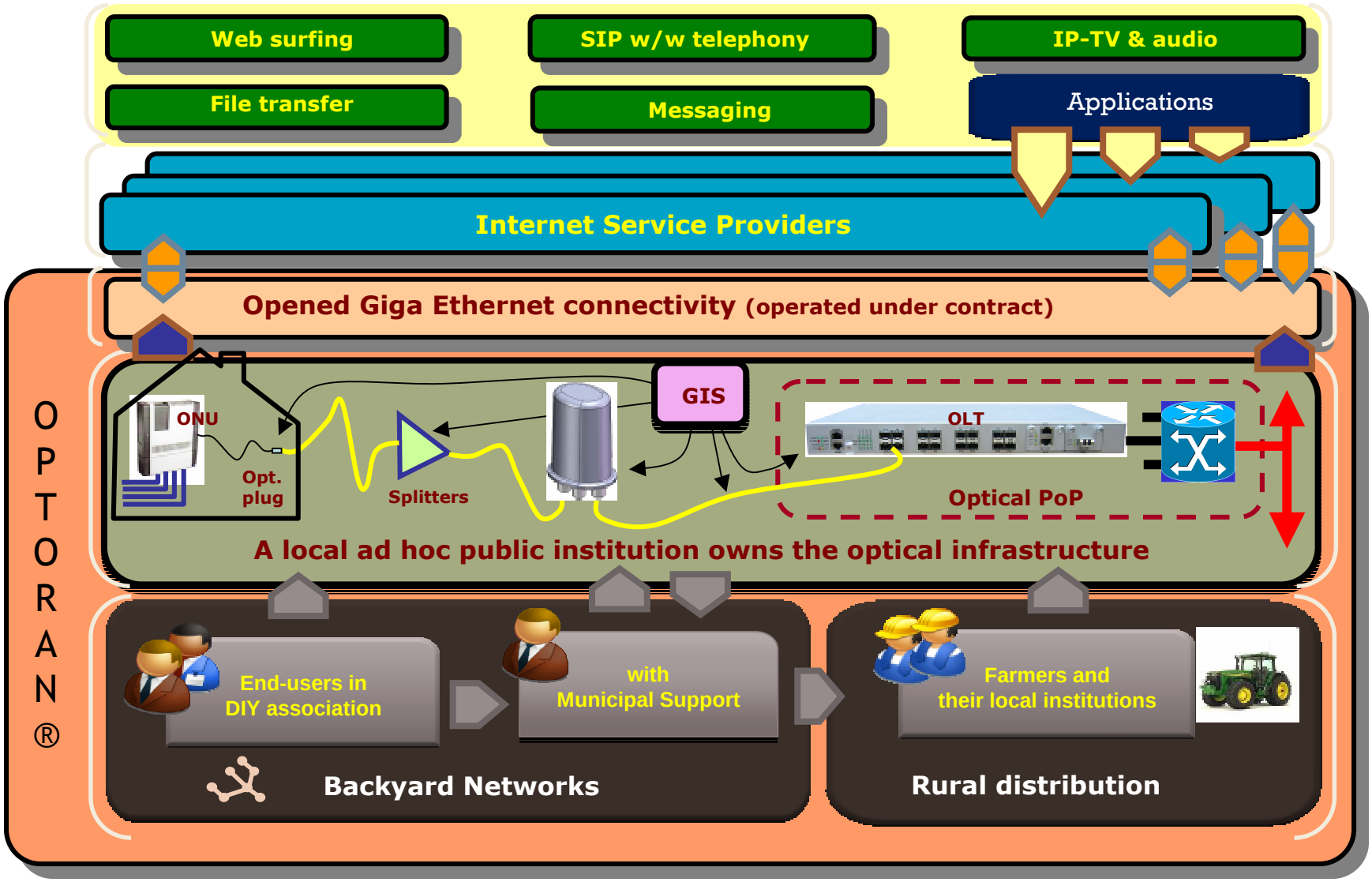
Back Yard Optical Network



Do It Yourself Optical Kit (8 homes)

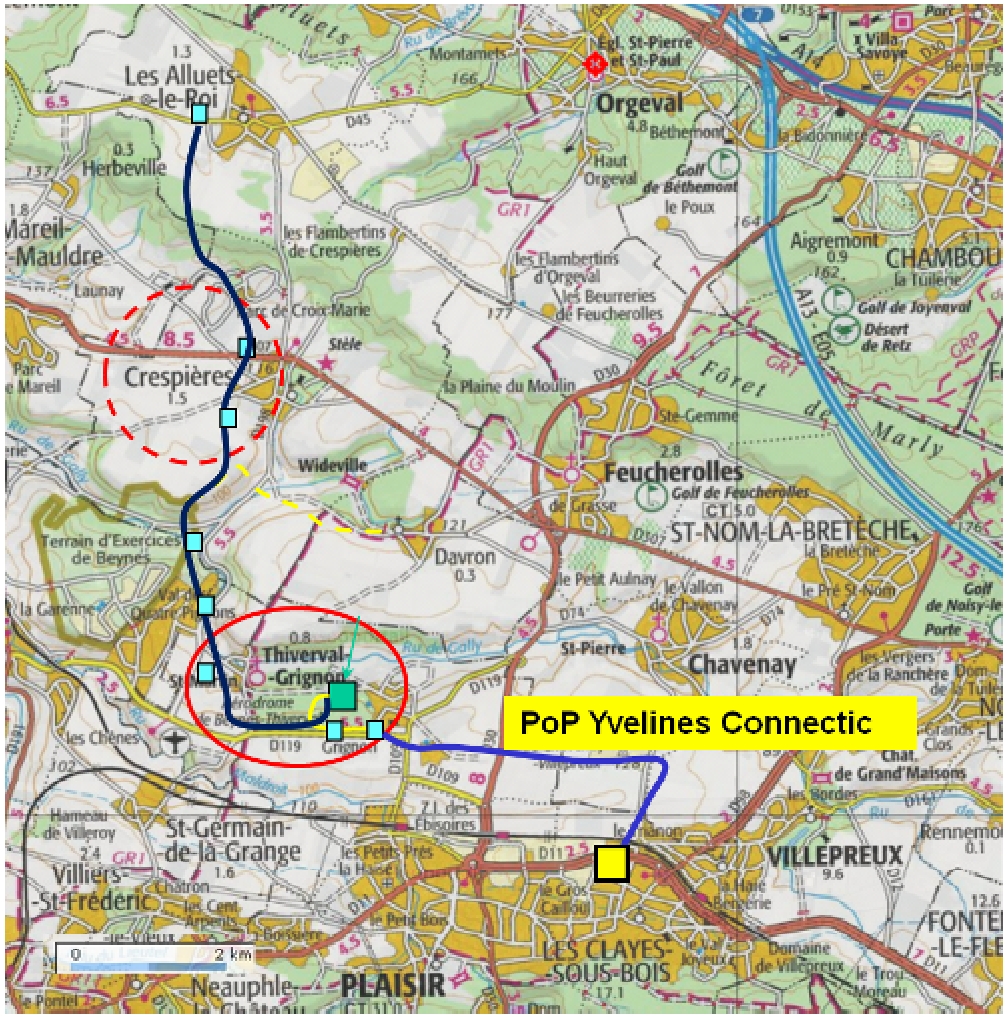


Organizational principles by FibTic



OptoRAN® : Optical Rural Area Networks

The Rural Yvelines French Project



- 3 villages (40 km W Paris):
  - Thiverval-Grignon
  - Crespières
  - Les-Alluets-Le-Roi
- 1600 households

- First step:
  - 300 households
  - 25 SMEs
  - 12 km municipalities & FT existing ducts
  - 8 km rural distribution
  - 50+ DIY Prysmian optical kits

Thanks for your attention!

Alessandro Pirri
head of Connectivity & FTTx
Prysmian Cables and Systems

Yves Laurentie
Président
FibTic