

Next Generation Networks: Trends and Experiences in Portugal

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Buenos Aires

- 1. Digital Single Market & DAE objectives**
- 2. Broadband deployment cost reduction's Directive**
- 3. Portuguese Regulatory Framework**
- 4. ANACOM Regulation**
- 5. Portuguese symmetric measures**
- 6. NGAs in Portugal**

What is at stake ?

Europe 2020: sustainable and social inclusive economic growth

Digital Agenda for Europe:

- **Fast Broadband coverage: at least 30 Mbps for 100% of EU citizens, by 2020**
- **50% of EU households with subscriptions above 100 Mbps, by 2020**

New directive: facilitate NGN roll-out by reducing deployment cost



Q: What is at stake ?

A: Roll out of Next Generation Access (NGA) networks (e.g. FTTH networks)

Civil Works & Physical infrastructure

Deployment of high-speed broadband networks

By any provider of public communications networks

Reduce costs by 20 to 30% and exploit synergies with utilities (energy, water, transport)

2. Broadband deployment cost reduction's directive

Ducts are not easily replicable

Civil works
represent up to

80%

of the total roll-out
costs of NGA



Source: European Commission

2. Broadband deployment cost reduction's directive

Four Pillars

Directive 2014/61/CE

- Access to infrastructure



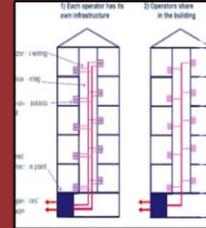
- Coordination of civil works



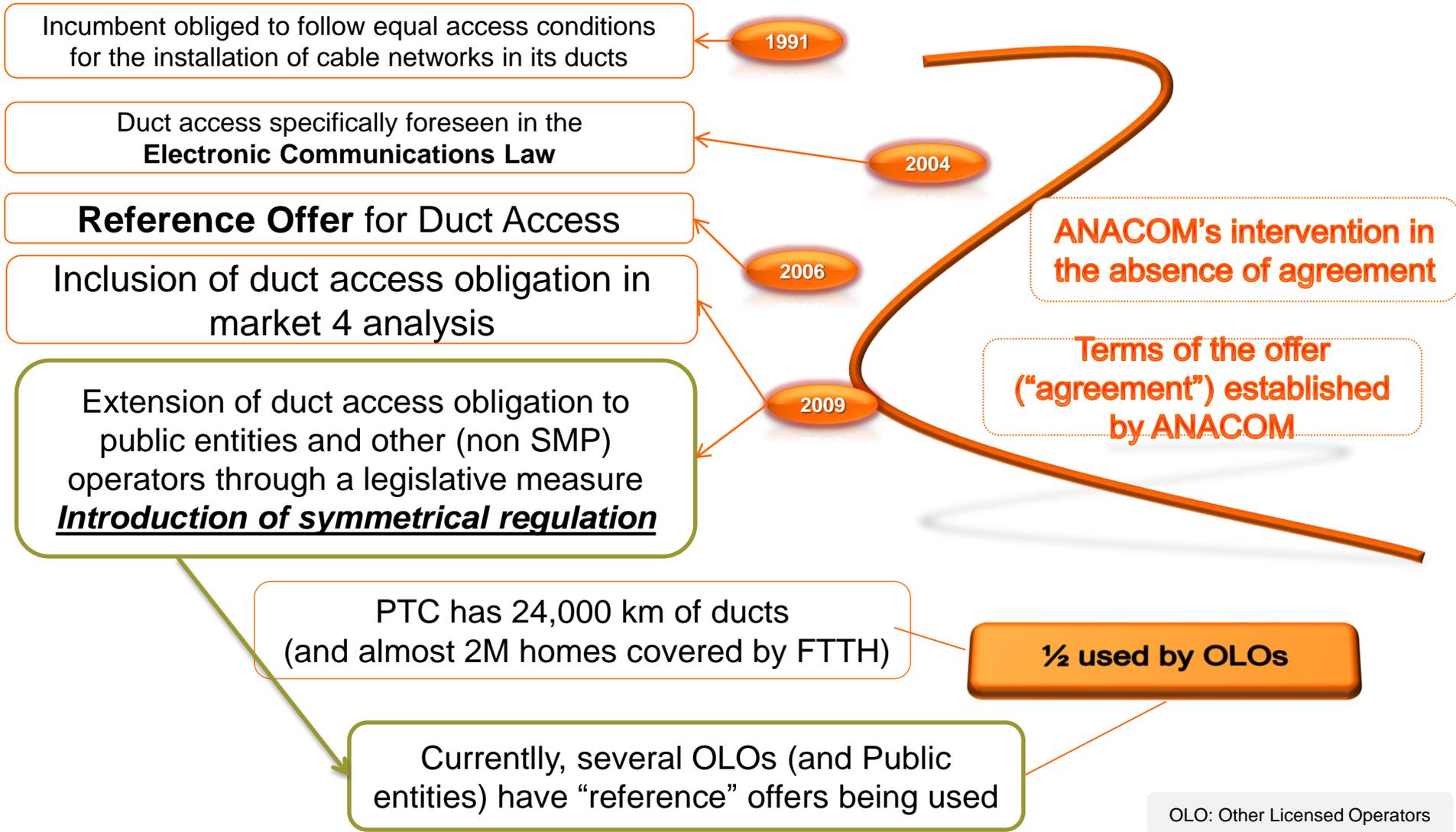
- Streamlining permit granting



- In building infrastructure



3. Portuguese Regulatory Framework

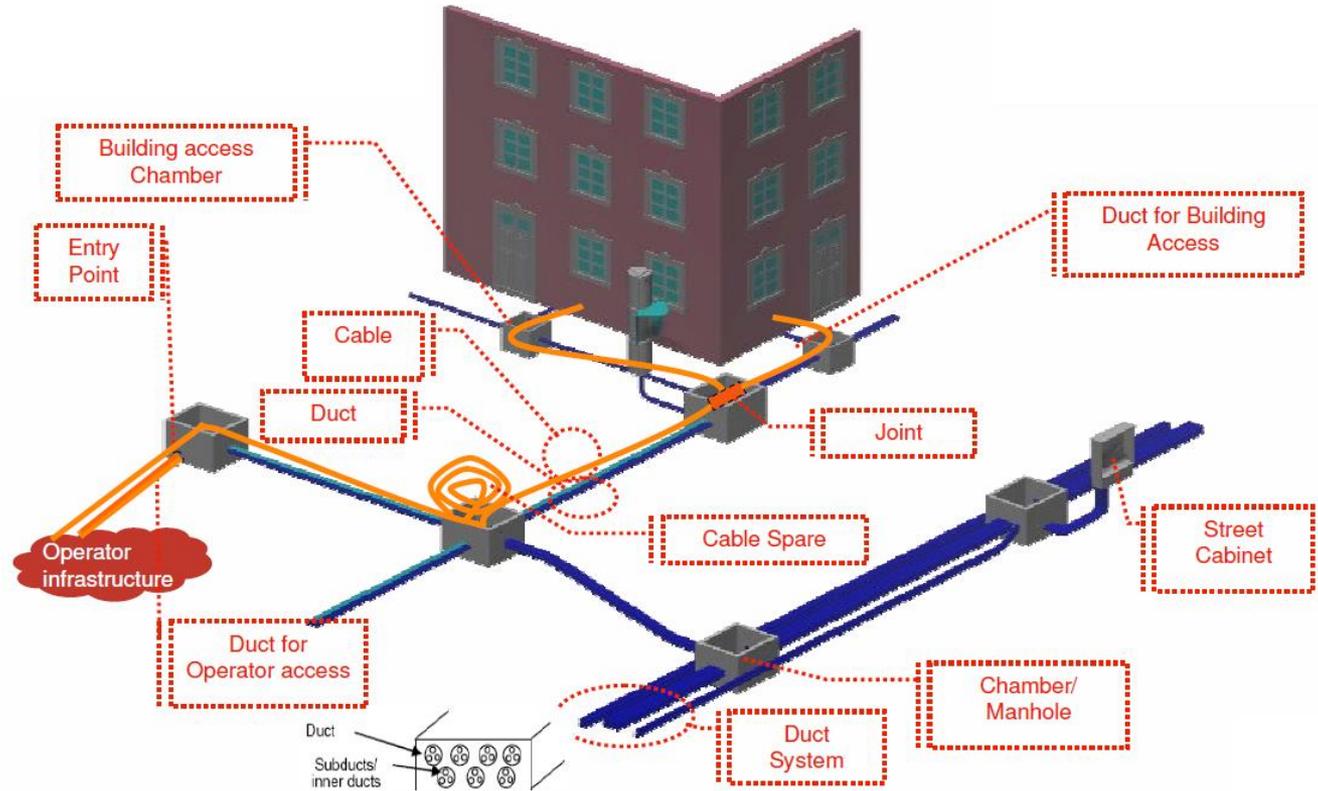


4. ANACOM regulation

Duct Access Reference Offer (ORAC)

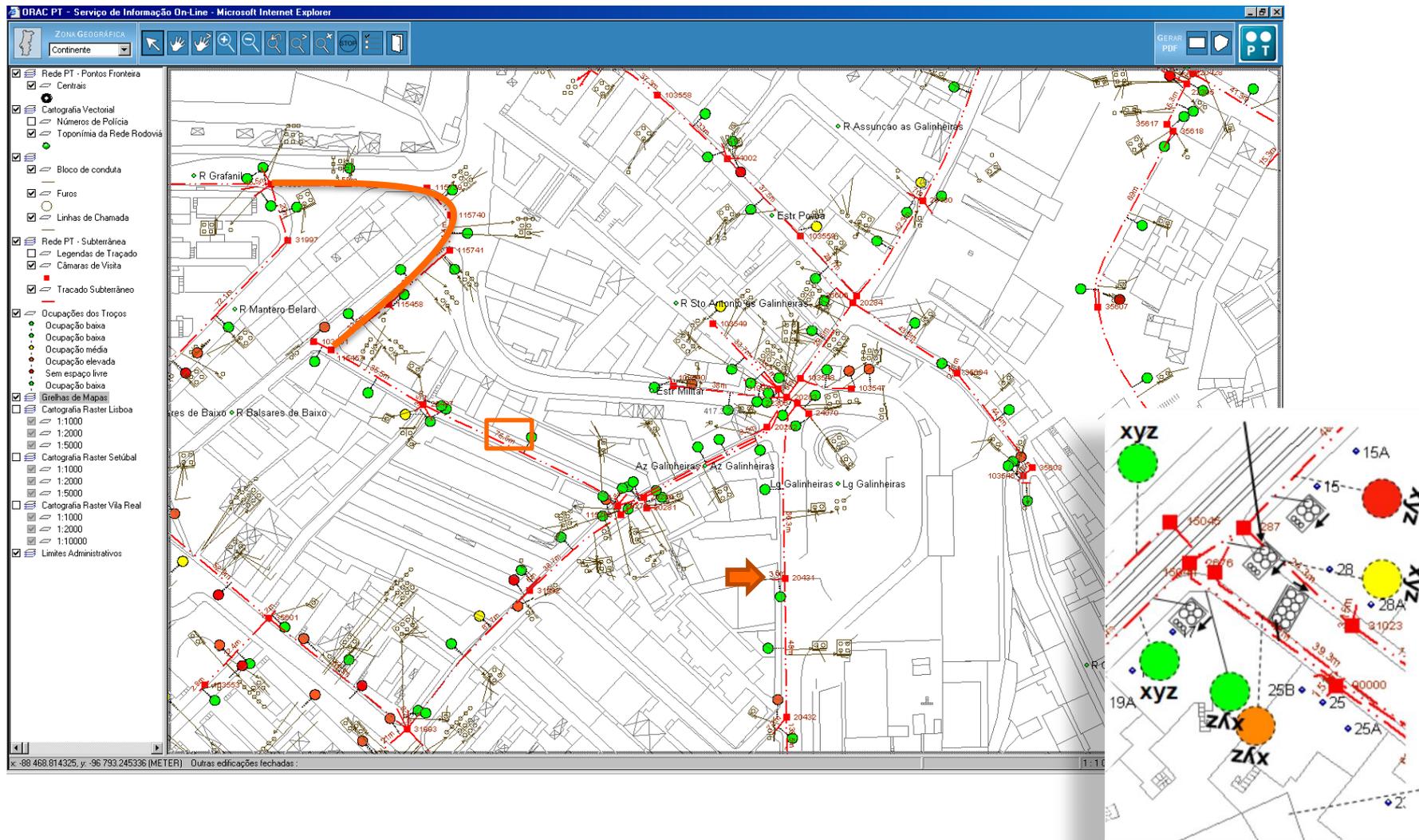
Access Network

Trunk Network



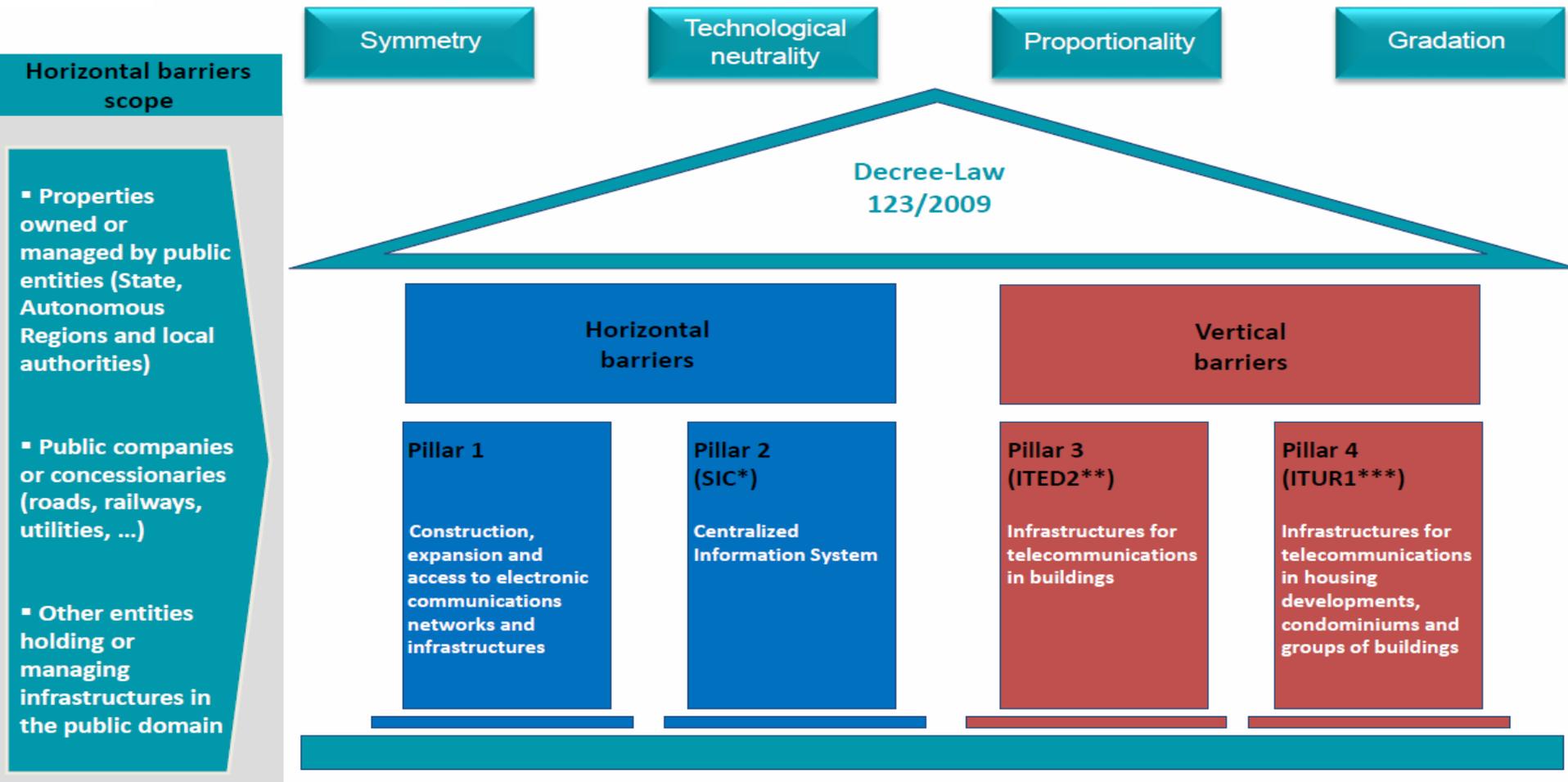
4. ANACOM regulation

– Duct database (*Extranet ORAC*)



5. Portuguese symmetric measures – DL 123/2009 – Access to “horizontal” and “vertical” infrastructures

In 2008 and 2009 the Government adopted measures to promote investment in NGA, focusing on access to horizontal and vertical infrastructures



By law all entities are obliged to give access to its own (or managed) infrastructure suitable for accommodating ECNs

Symmetrical access conditions

Open/non-discriminatory access to all suitable ducts and related infra-structure



Entities shall publish procedures and conditions applicable to the access



Access price should be cost oriented



Any (feasible) access request must be answered in 20 working days (max)



The installation must be done in 4 months maximum time



Other (horizontal) measures

- ✓ Access to other public infrastructures (e.g. towers, chambers, cabinets, buildings)
- ✓ Simpler and effective rules for the construction or extension of new infrastructures (may be under co-investment), including publicizing and cost sharing
- ✓ A public geo-referenced centralized information system (CIS) for all infrastructures

(Vertical) Access to buildings

- ✓ Open and non discriminatory access to buildings with at least a “dual fiber” optic cable per dwelling and a point for sharing infrastructure in the building or surroundings

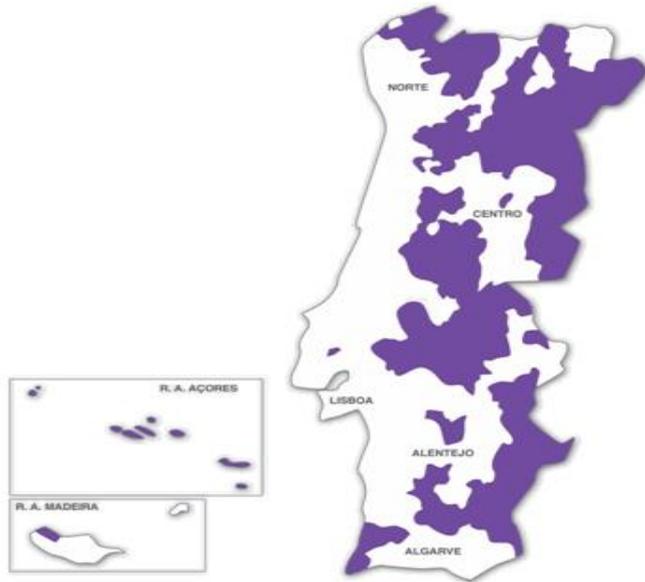
- ANACOM is responsible for the enforcement of DL123, including
 - ✓ breach proceedings and application (of fines);
 - ✓ settling disputes through a binding decision (without prejudice to the right of appeal to the courts).

- Entities that own ducts and related infrastructure suitable for accommodating ECNs shall (publicize and) communicate to ANACOM
 - ✓ procedures and conditions for access to and use of the mentioned infrastructures (an “offer”);
 - ✓ technical instructions that apply to the installation of electronic communications equipment and systems in own infrastructures.

- ANACOM was also required to issue minimum elements to include in the Centralized Information system (CIS) and technical standards on the design and set up of ITUR (last connection to the building), as previously done for vertical infrastructures within buildings (ITED)

6. NGAs in Portugal Rural areas - using existing infrastructures

Areas with market failure
(areas with no fibre, cable or ULL operators)



Characteristics of the service to be provided and coverage area

Speed of at least 40 Mbps

140 municipalities (out of 308)

1 million people (10% of the population)

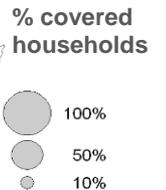
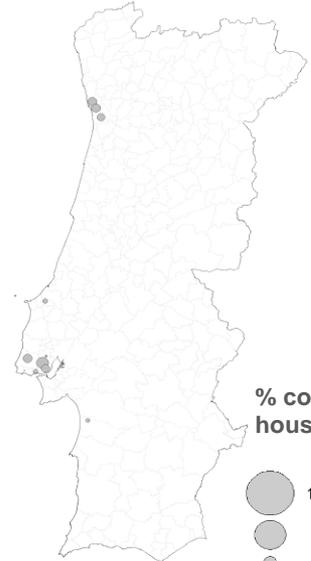
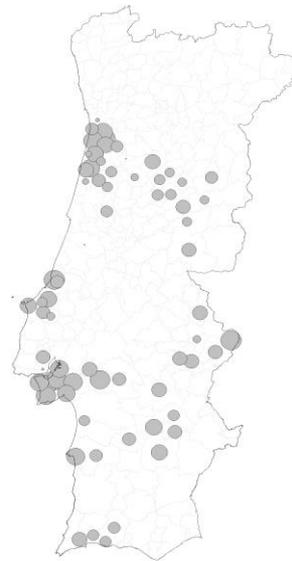
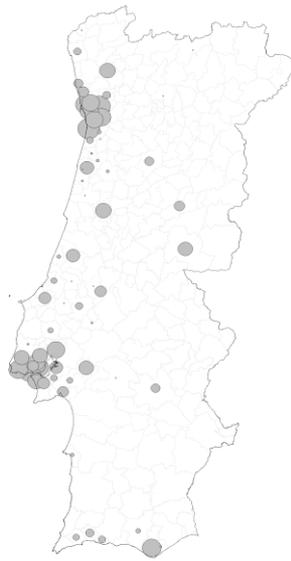
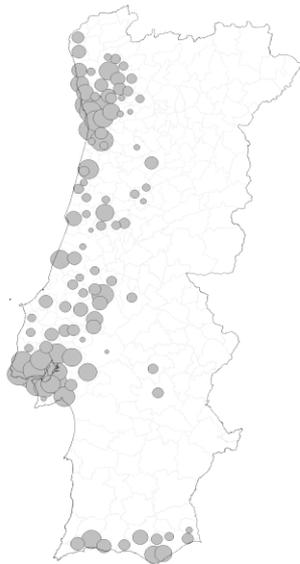
Coverage of the municipalities > 50%

Open network

Investment of 156.5 M€ – FTTH-GPON roll-out concluded at the end of 2013
Wholesale passive offers already in use, supporting 3P services

Privileged use of existing civil infrastructure (ducts, poles, etc.) from utilities (e.g. electricity concessionaires) or Public Authorities (e.g. Municipalities) and also from PT

6. NGAs in Portugal (end of 2013)



DOCSIS 3.0
(55%)

FTTH
(28%)

DOCSIS 3.0
(15%)

FTTH
(12%)

FTTH
(12%)

Significant overlap of FTTH with ZON-Optimus network (96%)

**ZON and Optimus
meanwhile have merged**



- ✓ Optimus and Vodafone had a sharing agreement – 400.000 houses passed
- ✓ Vodafone has plans to increase to ~25%

- Today, PT and Vodafone announced an agreement to share the PON network
 - Each operator will have access to 450.000 new houses
 - Each operator has access to 50% of the capacity of the shared PON network
 - Reciprocity in the access to PON network according to a IRU model (indefeasible right of use)
 - Investment in regions where cable is the only NGN operator: there will be 3 independent operators instead of 1
 - In regions where cable and PT are already present there will be a third competitor

- The coverage of the shared network is jointly decided, involving less profitable regions.
- Each operator is responsible for his own investment in order to fulfil the agreement conditions
- The right of access ensures that operator has effective and autonomous control of the network with full freedom to design and implement his commercial retail offers (only passive elements of the network are involved)
- It is a 25 years agreement
- The need for coordination and exchange of information are minimal