Broadband network development in white rural areas of Greece on PPP basis

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MINISTRY OF ECONOMY & DEVELOPMENT

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PPP Public & Private Partnerships

'Fifth annual EU conference on EAFRD financial instruments for agriculture and rural development in 2014-2020'

PPP Broadband projects in Greece

European Commission

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SPECIAL SECRETARIAT FOR PUBLIC-PRIVATE PARTNERSHIPS

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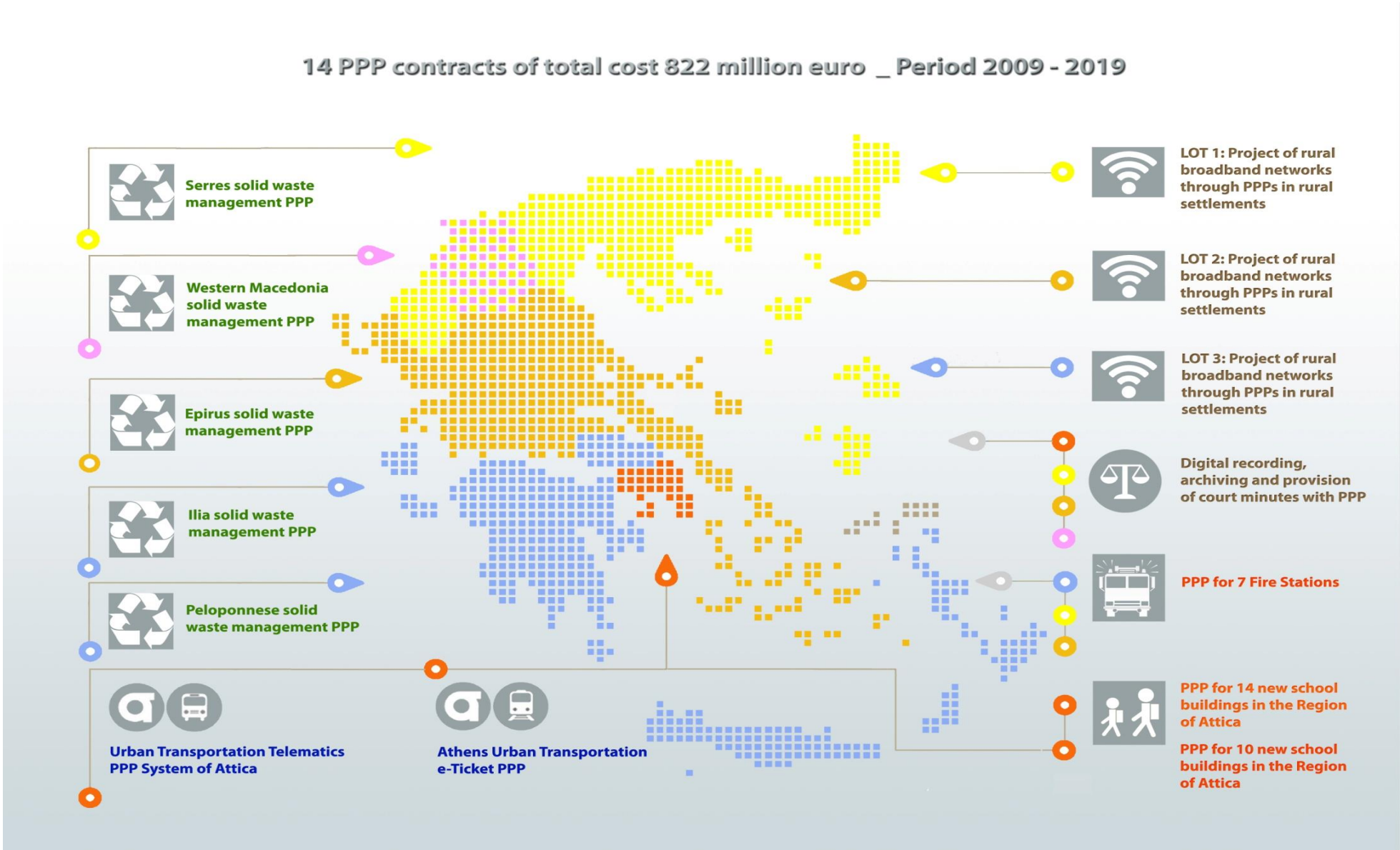
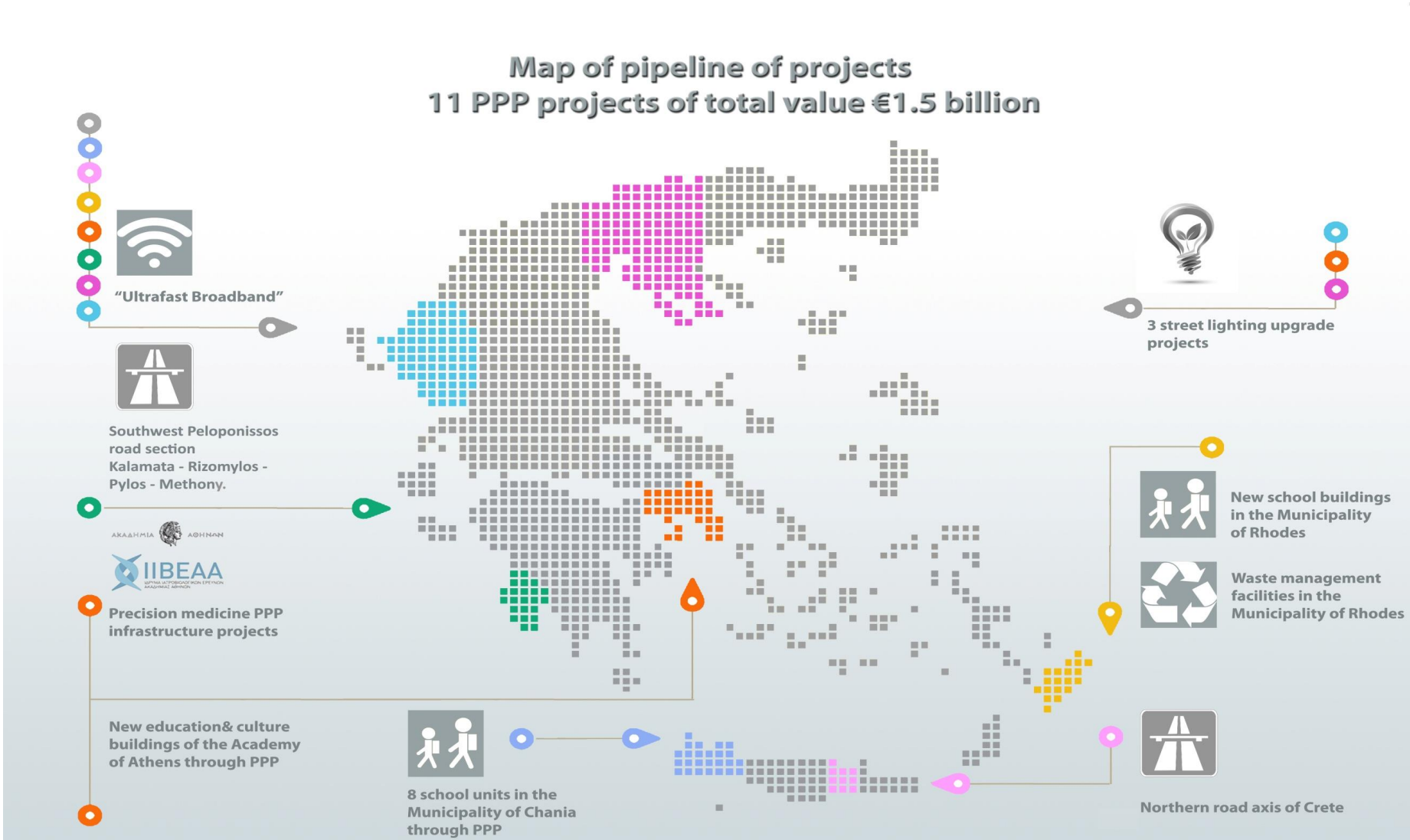

14 PPP contracts of total cost 822 million euro _ Period 2009 - 2019
Serres solid waste management PPP
Western Macedonia solid waste management PPP
Epirus solid waste management PPP
Ilia solid waste management PPP
Peloponnese solid waste management PPP
Urban Transportation Telematics PPP System of Attica
Athens Urban Transportation e-Ticket PPP
LOT 1: Project of rural broadband networks through PPPs in rural settlements
LOT 2: Project of rural broadband networks through PPPs in rural settlements
LOT 3: Project of rural broadband networks through PPPs in rural settlements
Digital recording, archiving and provision of court minutes with PPP
PPP for 7 Fire Stations
PPP for 14 new school buildings in the Region of Attica
PPP for 10 new school buildings in the Region of Attica


Map of pipeline of projects
11 PPP projects of total value €1.5 billion
"Ultrafast Broadband"
Southwest Peloponissos road section Kalamata - Rizomylos - Pylos - Methony.
IIBEAA
Precision medicine PPP infrastructure projects
New education& culture buildings of the Academy of Athens through PPP
8 school units in the Municipality of Chania through PPP
3 street lighting upgrade projects
New school buildings in the Municipality of Rhodes
Waste management facilities in the Municipality of Rhodes
Northern road axis of Crete

Major achievements

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Major achievements

Institutional framework

❖ ***Functional***

✓**Legal certainty:** more than 60 favorable decisions of the Hellenic Council of State, contracts approval by the Court of Audit.

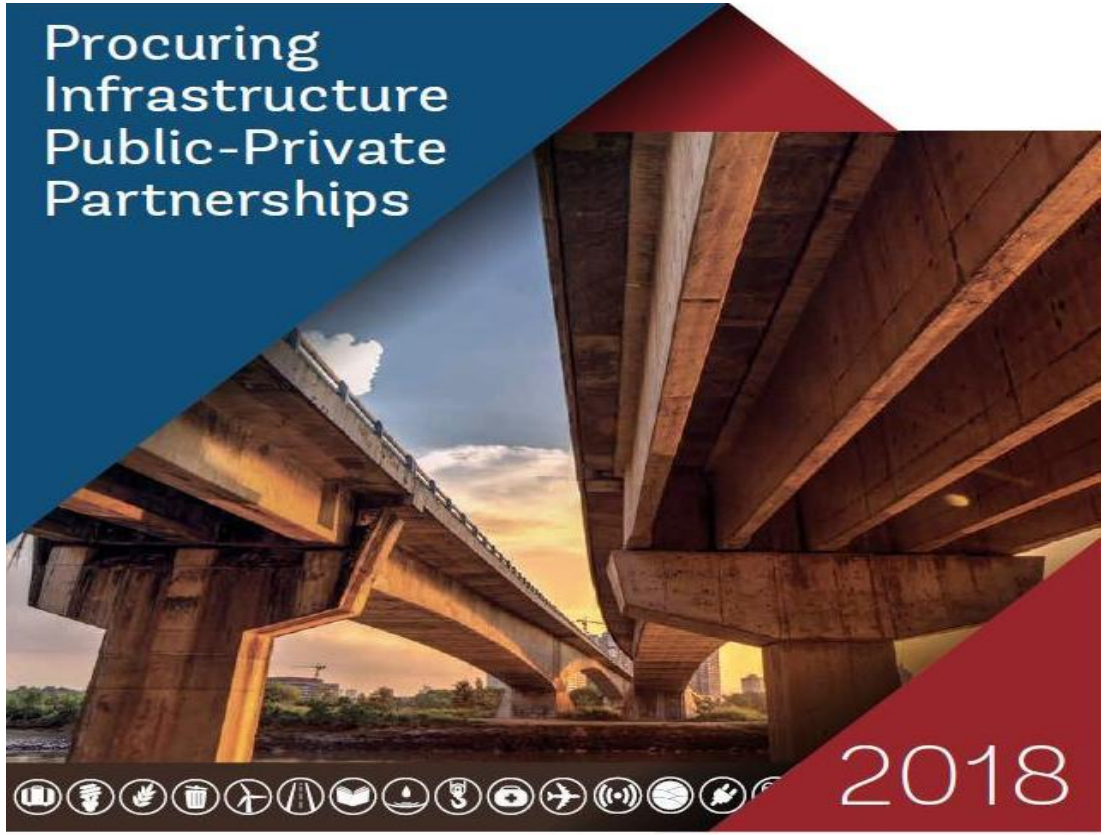
✓**Strong competition:** In 13 competitions, 76 bidders expressed interest in Phase A , while 40 submitted final binding offers.

❖ *Innovative*

✓First time at EU level that PPP funding was a combination of EIB funds and funds of JESSICA.

Major achievements

Greece has been classified **3rd worldwide** among 135 countries in the field of **"Procurement of PPPs"** according to **the World Bank** *2018 Procuring Infrastructure Public-Private Partnerships* report.



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Major achievements

In a recent study for the REGI Committee of the European Parliament, **Greece is recognised to be leading in the blending of EU grants and private capital financing of PPP schemes.**

Broadband Network Development in Rural 'White Areas' of Greece through PPPs

3 projects - Rural Broadband

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Awarding Authority:	Private Partner:	Equity/ Commercial banks: EUR 104.7m **EU GRANT :** **EUR 160.1m** **Total Project Cost:** **EUR 265m**	Financing : EU Grant Private partner Lenders involved : National Bank of Greece	Project type : Concession project
Information Society S.A. (KtP SA)	LOT1: OTE S.A. LOT2: HELLAS ONLINE – INTRAKAT - INTRACOM HOLDINGS LOT3: OTE S.A.			

Designing, financing, constructing, maintaining and operating broadband infrastructure that will provide broadband services to rural settlements, where there is no basic broadband infrastructure in place or is unlikely to be developed in the near future.

Sign of contract (LOT 1-2-3): Dec 2014

3 projects - Rural Broadband

- The Rural Broadband project is a nationwide public intervention aiming to bridge the digital divide in remote and sparsely populated rural 'white areas'.

- > 5,000 settlements (White, Rural areas)
- > 500,000 citizens

- Nationwide network

- PPP scheme (2 yrs. Built + 15 yrs. Operation)

3 projects - Rural Broadband

Aim of the project

Problem

- Market failure
- No connectivity
- No e-services
- No equal
- Negative impact on social well-being
- Digital Divide

Solution

- Public intervention [limited to eligible for funding areas]
- Provide broadband / open infrastructures
- The project aim to cover a critical ~5% of population

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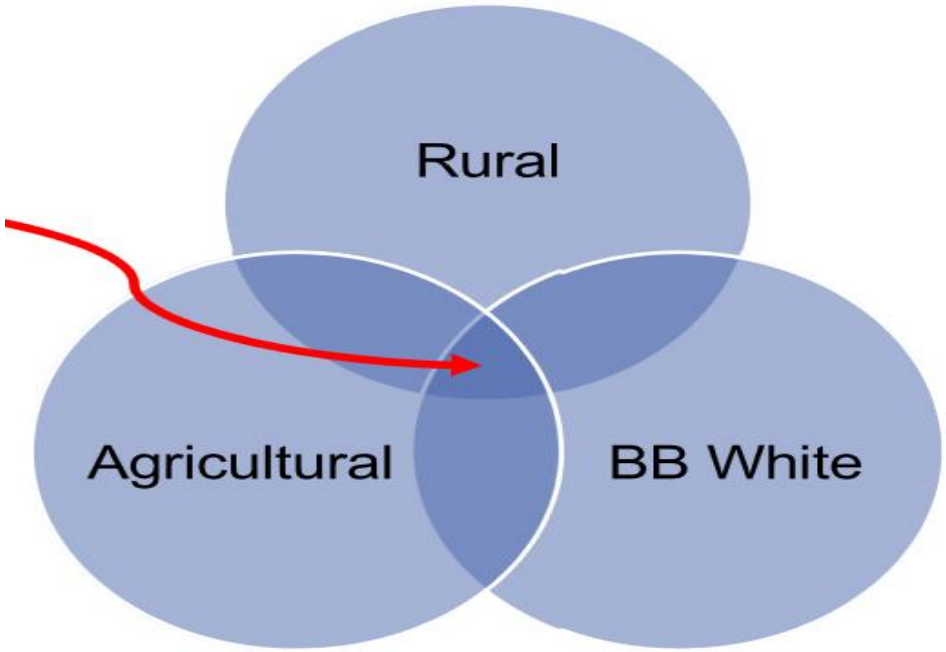
Areas of intervention

Settlements that fulfill all the eligibility criteria
of ERDF & EAFRD are eligible for funding, thus constitute the intervention area.



Parameters:

- Geographic area
- Type of economic activity
- Existence of BB infrastructures

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DBOT

- **Design** Network design by the contractor (SPV)
- **Build** Contractors implement the project
  3 milestones: 30%, 60%, 100% population coverage
  External auditor assess the progress
- **Operate** SPVs provide wholesale only access to third-party ISPs (retail service providers)
  Retail prices are subject to NRA's regulation/supervision
  Any retail provider has access, on equal terms (open-access, non-discrimination)
- **Transfer** Public authority retains the ownership of infrastructures during all the project life.
  After the end of the concession period, the management of the network return to the project owner (public sector)

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LOTS

Each LOT was assigned to one SPV:

LOT1: Macedonia, North Aegean (www.oteruralnorth.gr)

LOT2: Central Greece, Thessaly, Epirus, Cyclades (www.ruralconnect.gr)

LOT3: Peloponnese, Crete, Ionian, Dodecanese (https://www.oteruralsouth.gr)

LOT	Residents	Villages / Settlements
1	170,884	1,188
2	185,043	1,864
3	169,360	2,025
TOTAL	**525,287**	**5,077**

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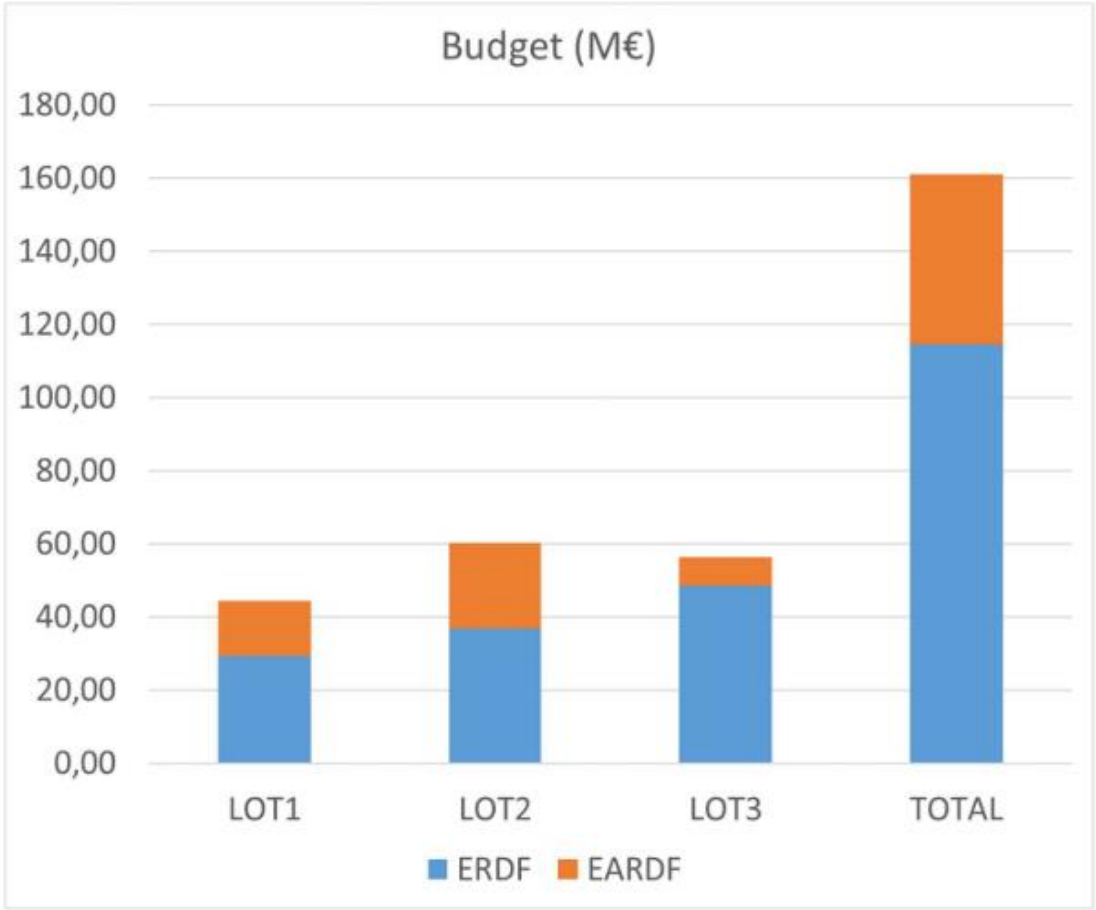
Budget

M€	LOT1	LOT2	LOT3	TOTAL per OP/RP
OP Digital Convergence	23,96	36,82	48,38	109,15
RP Macedonia-Thrace	5,27	0.00	0.00	5,27
Rural Development Programme	15,15	23,48	8,00	46,63
Total per LOT	44,37	60,30	56,38	161,05



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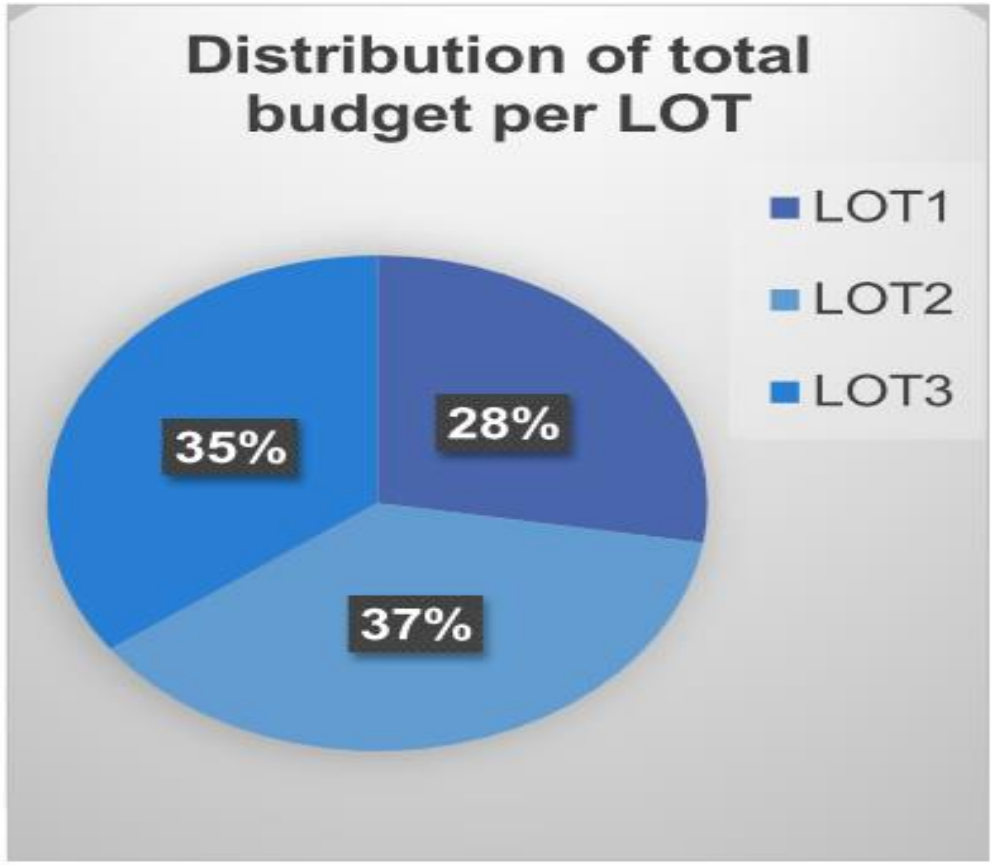
100% EU funding – 2 Programming periods.

PP 2007-2013
OP Digital Convergence (ERDF)
RP Macedonia – Thrace (ERDF)
Rural Development Programme of Greece 2007-2013 (EAFRD)

PP 2014-2020
OP - Competitiveness, Entrepreneurship and Innovation (ΕΠΑΝΕΚ) (ERDF)
Rural Development Programme of Greece 2014-2020 (ΠΑΑ)(EAFRD)



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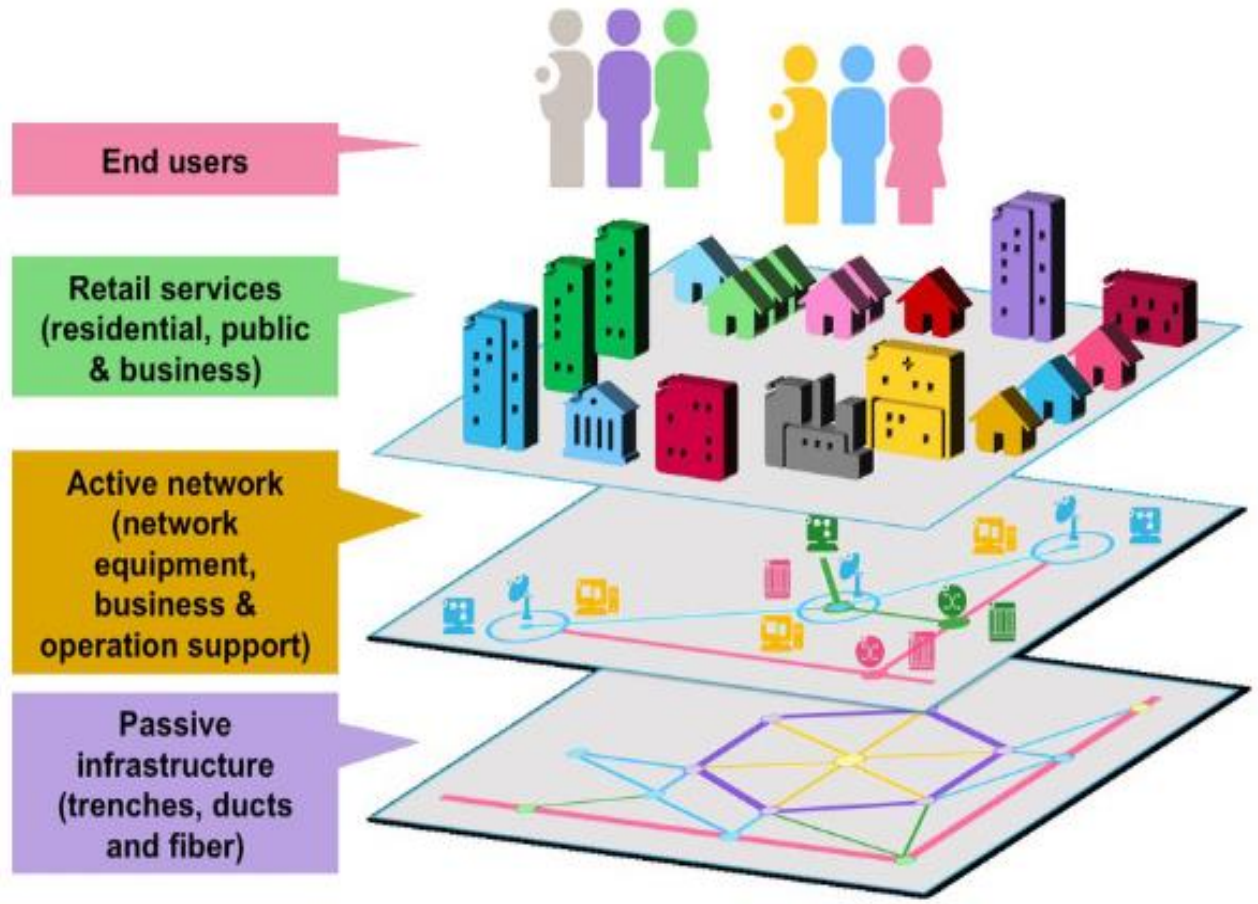
Technical Approach

LOT1 & LOT3

Fiber-optic cable up to the settlement and also by renting (IRU) optical fiber in parts of the network that already exists such infrastructure.

LOT2

Combination of fiber optic cable up to settlements and also by wireless network coverage (LTE) of settlements.



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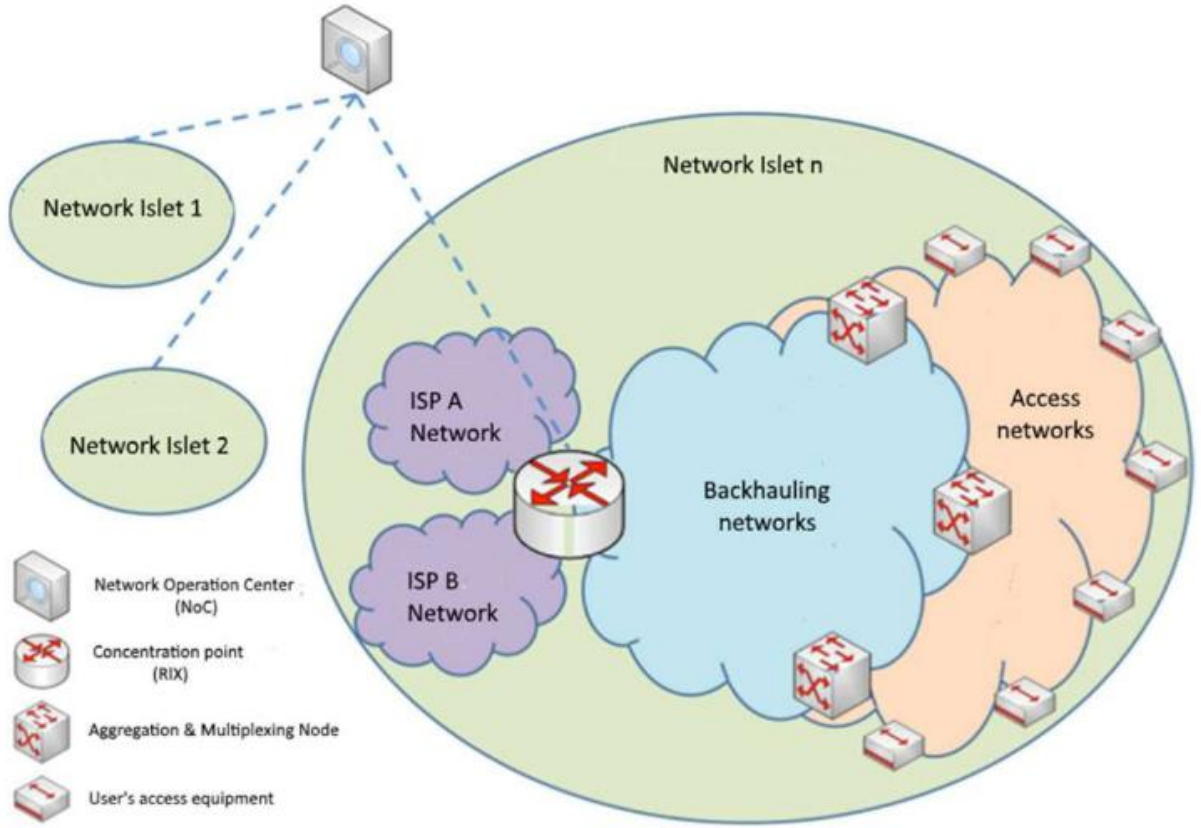
Network Architecture

- Network islets
- Both passive & active equipment
- Backhauling
- Access (where required)
- Concentration Point (RIX) – at least one per perfecture
- NoC



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Network layers & Architecture

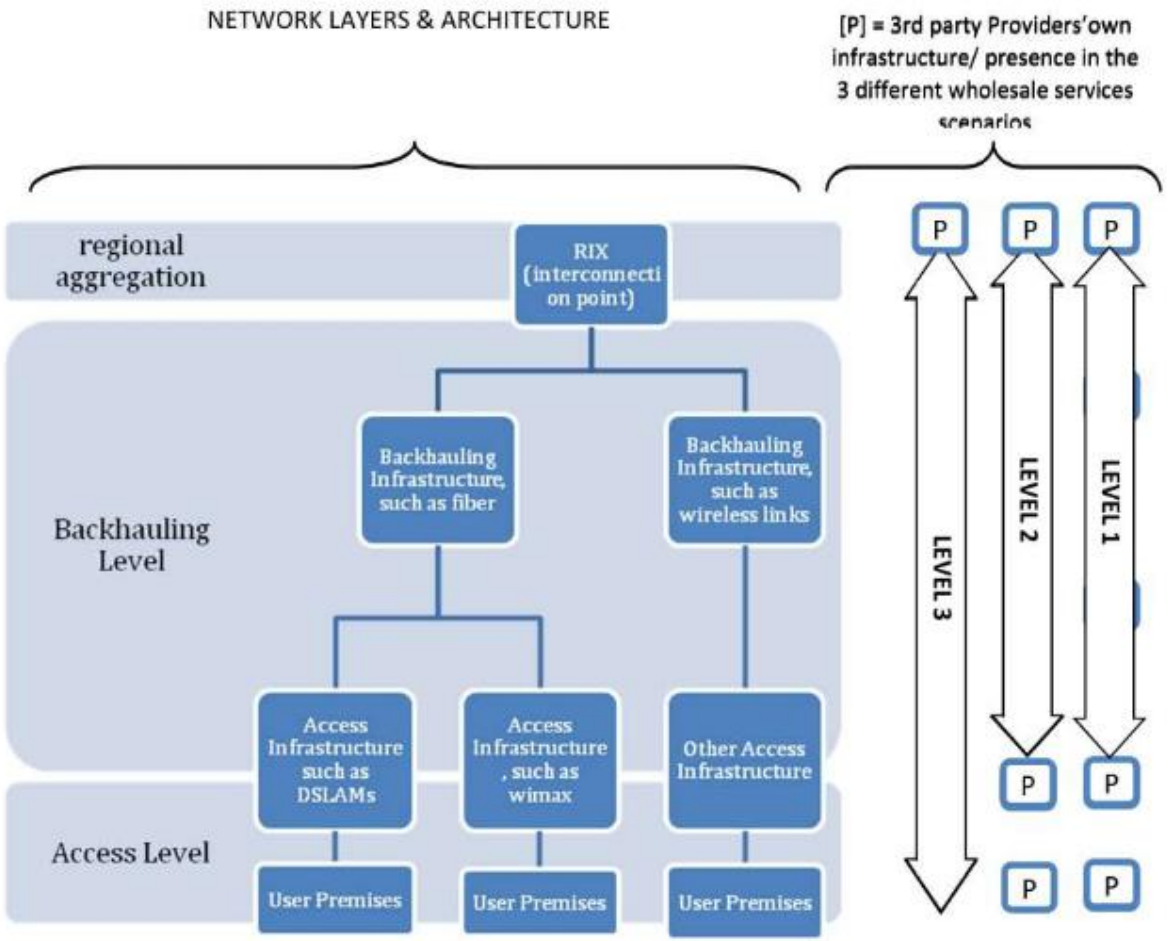
Actual L3 Services (availability 98.75%)

LOT1 & LOT3

- 50Mbps/30Mbps with 1:5 contention ratio
- 30Mbps/4Mbps with 1:20 contention ratio

LOT2

- 30Mbps/4Mbps with 1:20 contention ratio
- 8Mbps/2Mbps with 1:40 contention ratio



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Wholesales Services

Level 1: Wholesale access to passive infrastructure

• 3rd party providers can lease passive infrastructure and use relevant facilities, in order to deploy their own transmission/ access networks.

• Long/short term leasing of micro-ducts, dark fiber, collocation.

Level 2: Wholesale provision of leased lines

• 3rd party providers can use leased lines (active bandwidth) in order to handle traffic from certain residential departments to the corresponding RIX (backhauling).

• Leased lines 10Mbps – 1Gbps, availability 98.75%-99.99%.

Level 3: Wholesale bit-stream broadband access

• 3rd party providers can use the installed infrastructure to provide connectivity/internet services, without the prerequisite of any network investment in the specific rural areas (bit-stream wholesale access).

• In this case, 3rd party providers will ‘receive’ traffic at the neighboring RIX.

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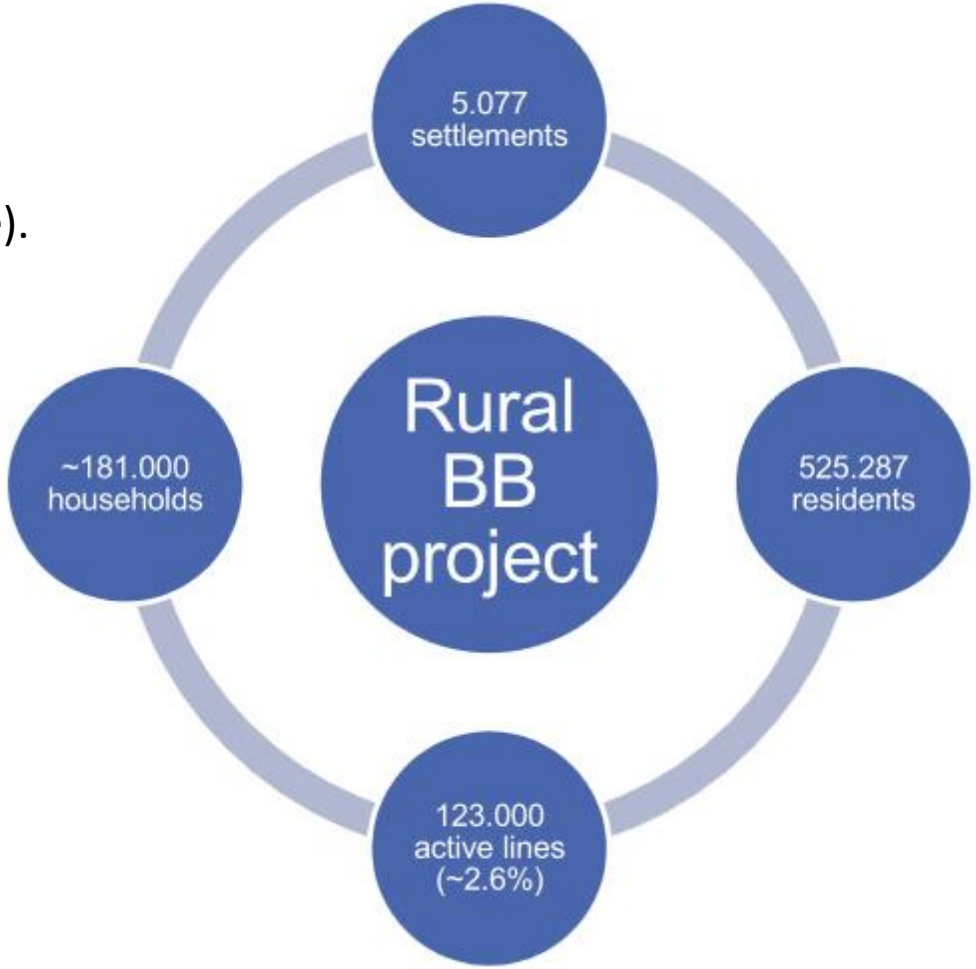
Project Data

The project covered ~45% of the Greek territory (geographical coverage).

- ~10,000 km of trenching !
- ~3,800 km optical network (IRU)
- 2,328 DSLAM Installations
- 262 wireless nodes



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Milestones

Phase A [end of building phase]

- Population coverage > 85%
- Geographic coverage > 60%
- Covered population with Class A services (30Mbps / 4Mbps) > 40%
- Fiber-linked settlements > 400 residents

Phase B [end of project]

- Population coverage > 95%
- Covered population with Class A services (30Mbps / 4Mbps) = 100%

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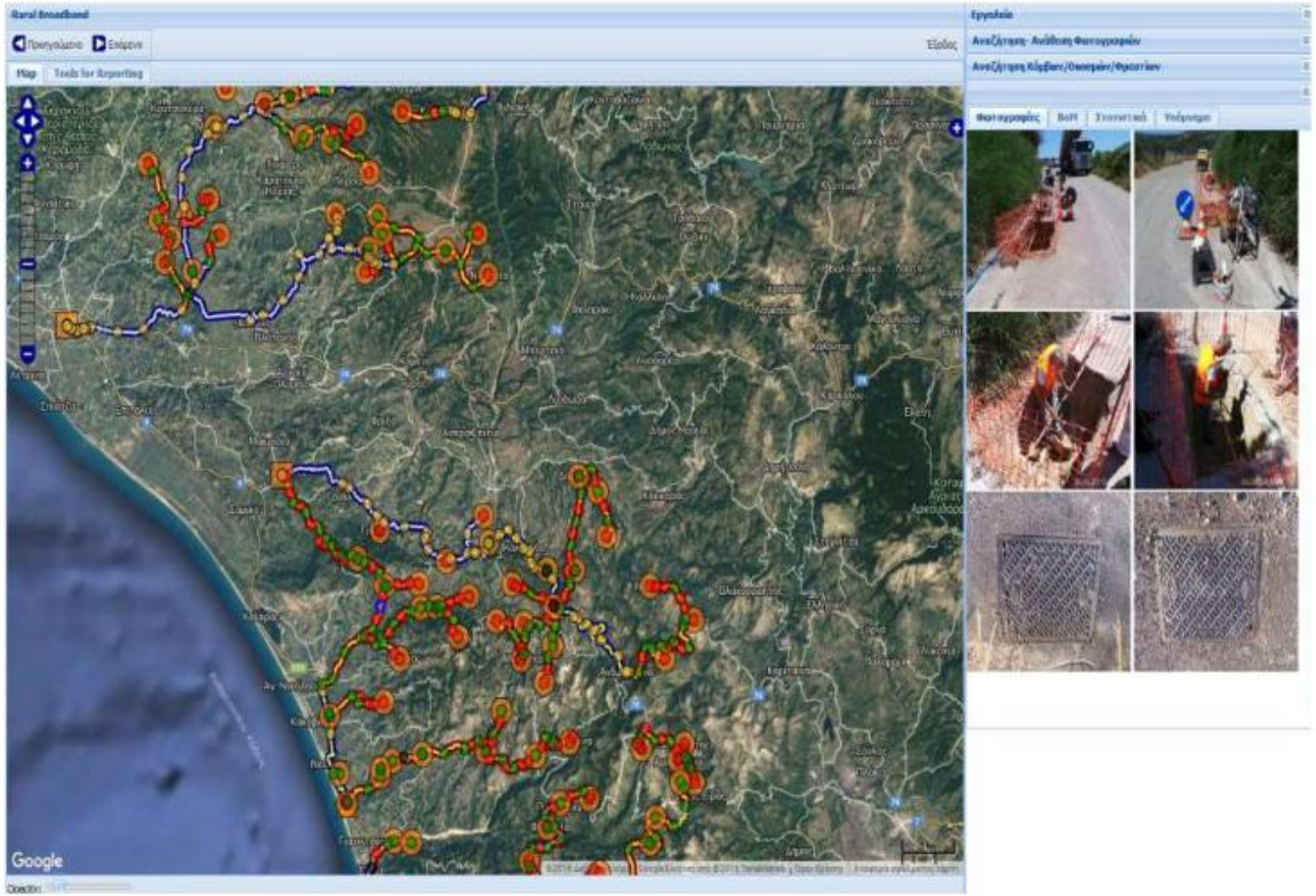
Project monitoring



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Implementation challenges

- **Peculiarities of the country (thousands of villages sparsely distributed over mountainous areas and islands)**
- **Delays in the issuance of excavation and trench permits by local authorities**
- **Unfavorable weather conditions (intense rainfall, snowfall, floods, etc.)**
- **Delays in the issuance of wireless telecommunication tower/antenna permits (the procedure is consisted from 14 distinct steps, from which the most time consuming are):**
  - **Forestry Permits**
  - **Ephorate of Antiquities Permit**

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Public Buildings

The project offers broadband access (service availability) to 3,193 public buildings of rural, remote areas of the country.

TYPE OF AUTHORITY	NUMBER OF BUILDINGS
EDUCATION	2.607
LOCAL & REGIONAL AUTHORITIES	242
CITIZENS' ONE STOP SHOPS (KEP)	132
POLICE - PORT POLICE - FIRE DEPTS	115
HEALTH	46
REVENUE AUTHORITIES (TAX, CUSTOMS)	26
COURTS	6
OTHERS	19
TOTAL:	3.193

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Project Stakeholders

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Lessons learned

• Cooperation of all stakeholders (government, municipalities in rural areas, telecom sector, construction companies) is crucial for the success of the project.

• Regional and local authorities should actively support the implementation and facilitate/expedite the project (e.g. timely licensing when required).

• A common licensing regime for all the country and its due application is of key importance.

• Rural Broadband projects bridge the broadband divide; other aspects of the digital divide should be treated as well.

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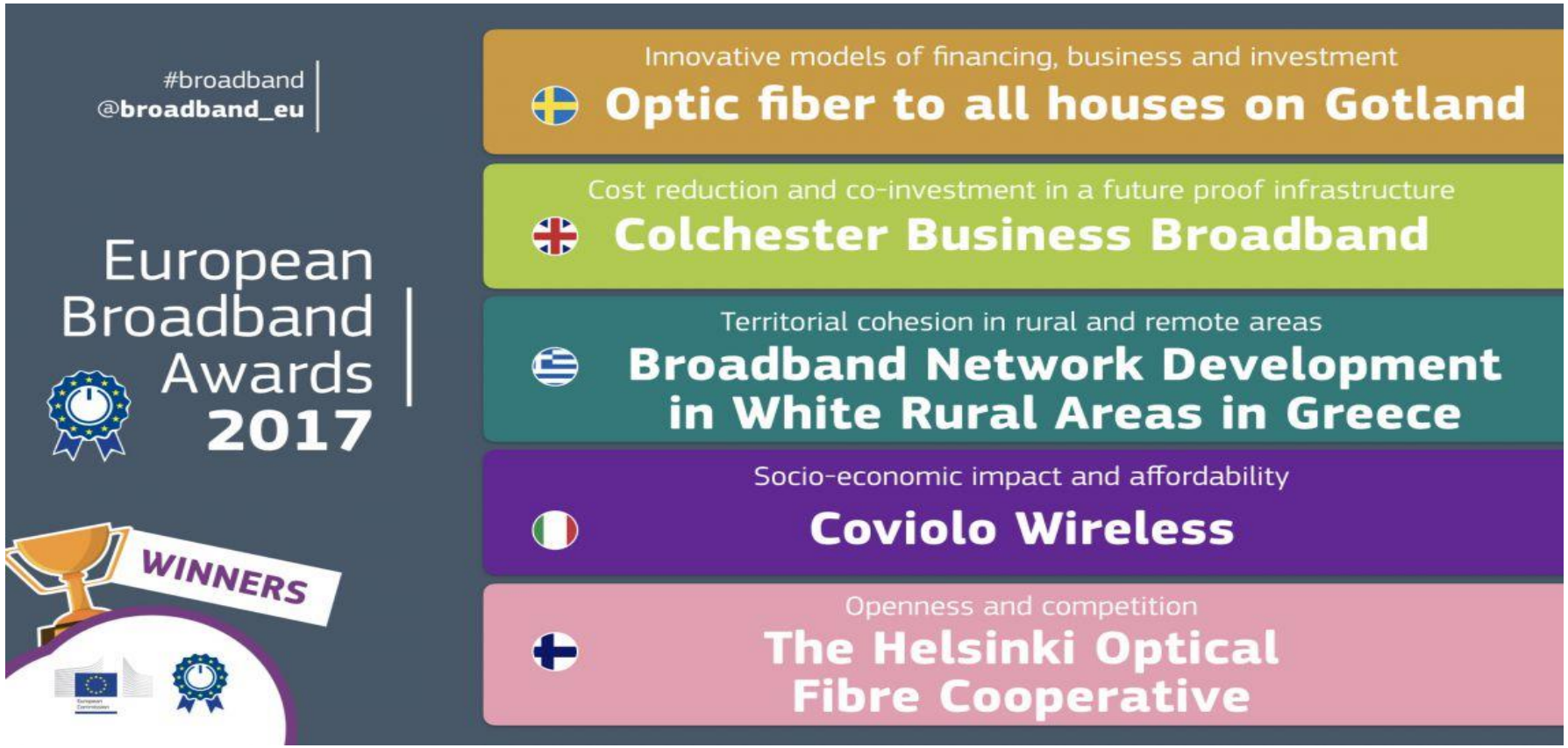
EU Broadband Award

The project was the 2017 EU Broadband Award winner - Category 3: Territorial Cohesion



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New PPP project

"ULTRAFAST BROADBAND"

Project cost €700million

Ultrafast Broadband

UFBB

• A major PPP project (DBOT) aiming to provide VHCN availability to ~18% of the population

• Wholesale only infrastructures

• **7 LOTs**

The project aims to cover:

• >98% of the NGA-white areas with Class B services (at least 100Mbps DL) and at least 65% of the NGA-white areas with Class A services (DL 100Mbps, readily upgradable to 1Gbps).

• Est. budget EUR 700m (public intervention EUR 300m - ESIF)

• Competitive dialogue procedure

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final recipients
added value
technical support
co-financing
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