Mapping of Broadband Infrastructure, Services and Quality of Service - Polish Experience

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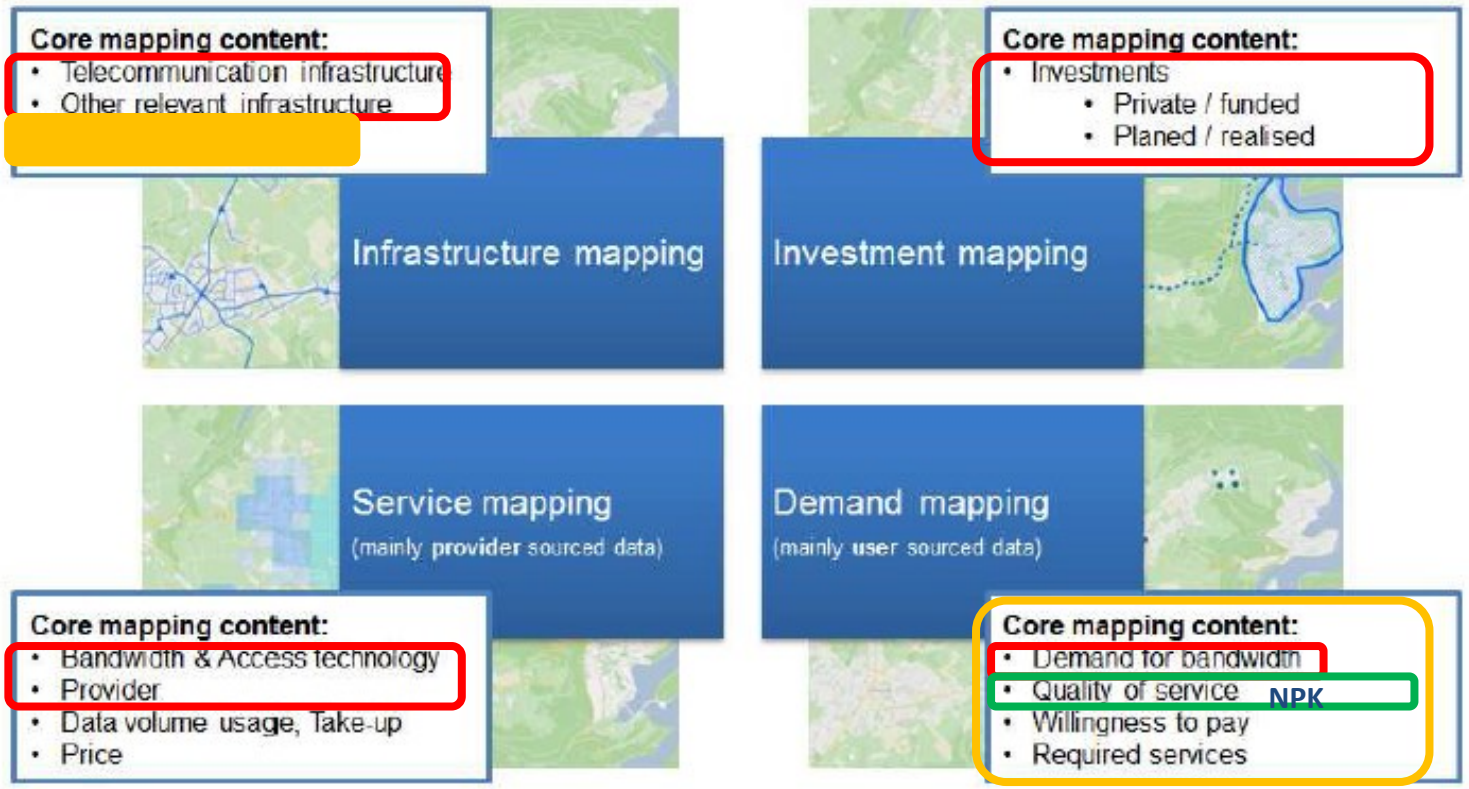
Categories of broadband mapping

Status of the Polish mapping and plans

Under development
Done

Test phase



Source: Broadband and infrastructure mapping study SMART 2012 / 0022

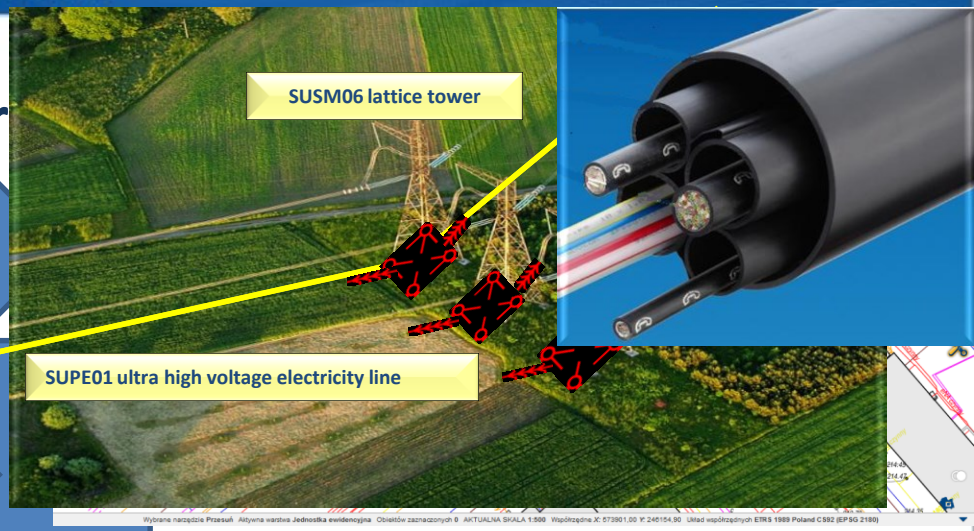
UKE register

Regulation –critical infrastructure

Regulation

- Network operators
- KGESUT, BDOT 10K… — GUGiK — X
- Closed area
- Road administrations
- SIIS Polish mapping system
- Access conditions- webpage addresses
- Local taxes- occupation of roadway

PIT



PT — Information about the technical infrastructure that can be used to placed in it or on it infrastructure or network telecommunications

PT — Central repository of procedures, documents and formalities required before start works on the telecommunications infrastructure

Register of procedures, permits, etc

Information Point for Telecommunications

Reuse directive

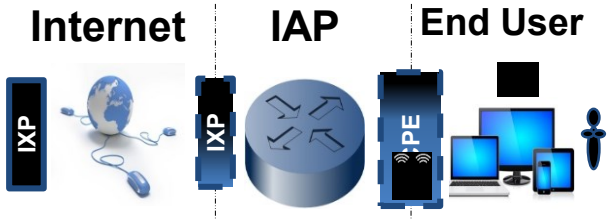
Main objectives

Mapping initiatives aim to provide governments, national regulatory authorities, consumers, operators and industry with essential information on existing physical infrastructure. They also support investors in the planning and decision-making processes regarding broadband networks.

relevant information for anyone who needs them

- underserved areas (using gap analyses techniques);
- areas for improvement;
- areas for future expansion and investment plans; and
- areas where synergies may exist between the telecommunications sector and other utility sectors (e.g. for the deployment of smart grids, infrastructure sharing and common investment co-ordination to reduce costs)

Terms “QoS” and “QoE” have evolved to three different QoS project definitions



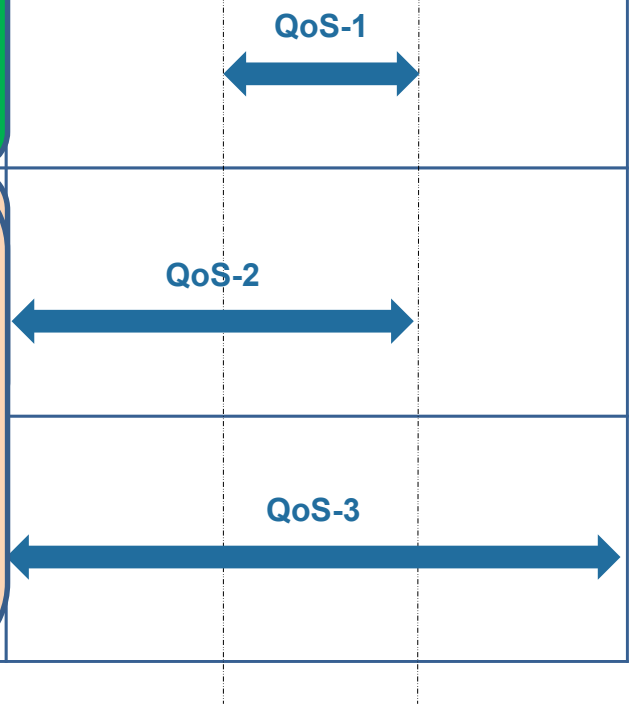
QoS-1: Theoretical

We are able to cover this level in 100% on very detail level

QoS-2: Practice optimal

QoS-3: Practice experienced

Now we are in the process to cover the last two levels by rescaling the existing tool and addling new functionality



Quality of service

We have been collecting data for 6 years.
We check data quality
and its logical correctness.
Data are stabilized and representative for the Polish telecom market.

We are using these data day by day.

We have changed the law
to give access to some data to everyone.

Global usage of data

Gap analysis for Poland for the optimal use of the EU funds

Assumption:

We have to ensure all households access to Internet bandwidth of at least 30 Mb/s.

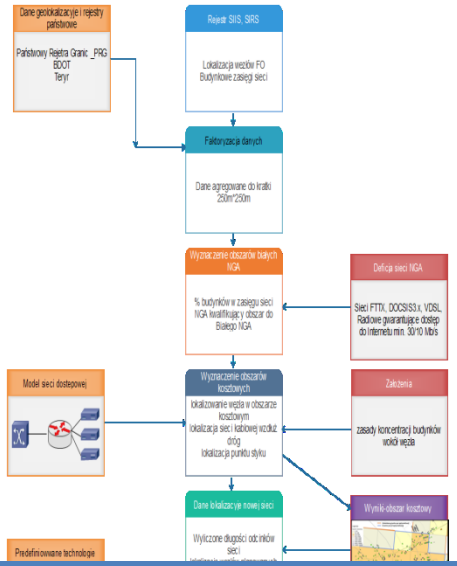
We needed to calculate how much it will cost to build the missing NGA networks.

Problem to solve:

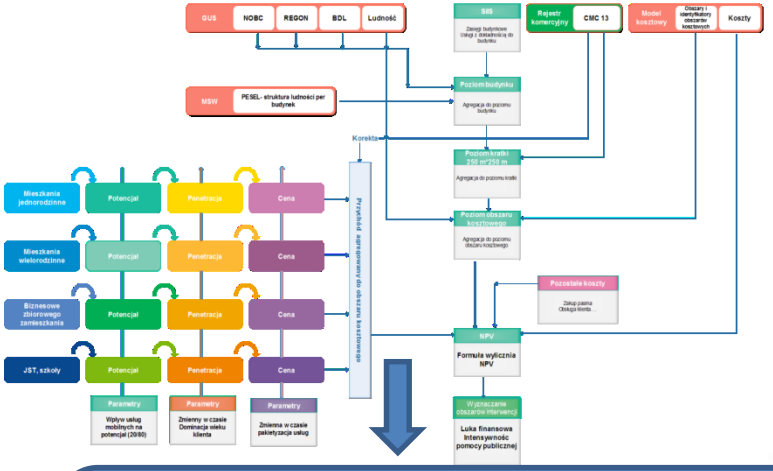
How to efficiently use the EU funds ?

Where are the areas for public intervention?

Network Cost Module

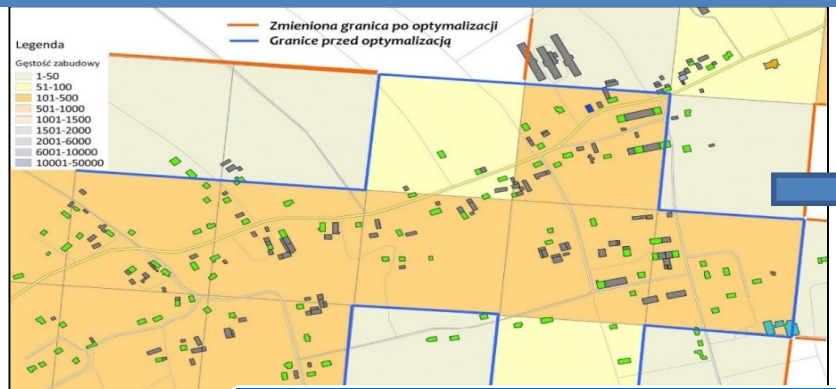


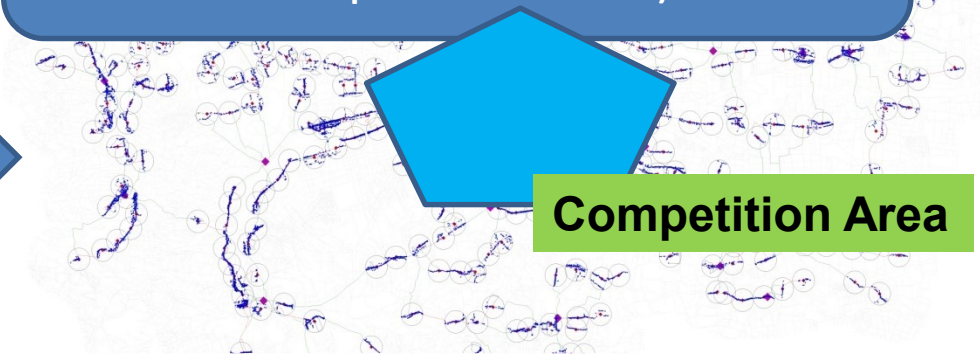
Demand and a Revenue Module



Multiparametric module of aggregation cost area (NPV, the intensity of the aid, max. penetration, network topology, HP cost, statements regarding municipalities. Fee lane ....)

Designation of the area to build a network

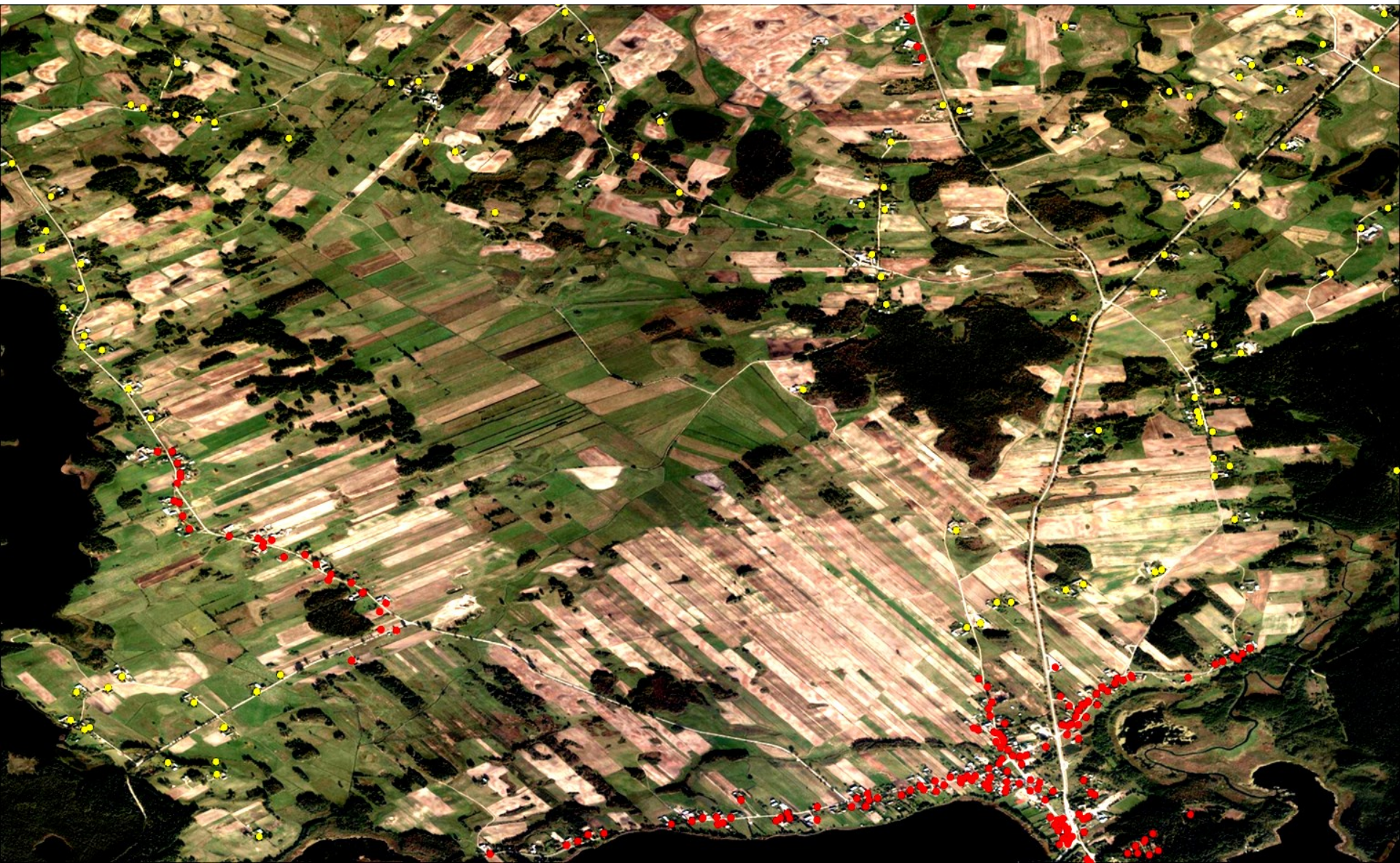




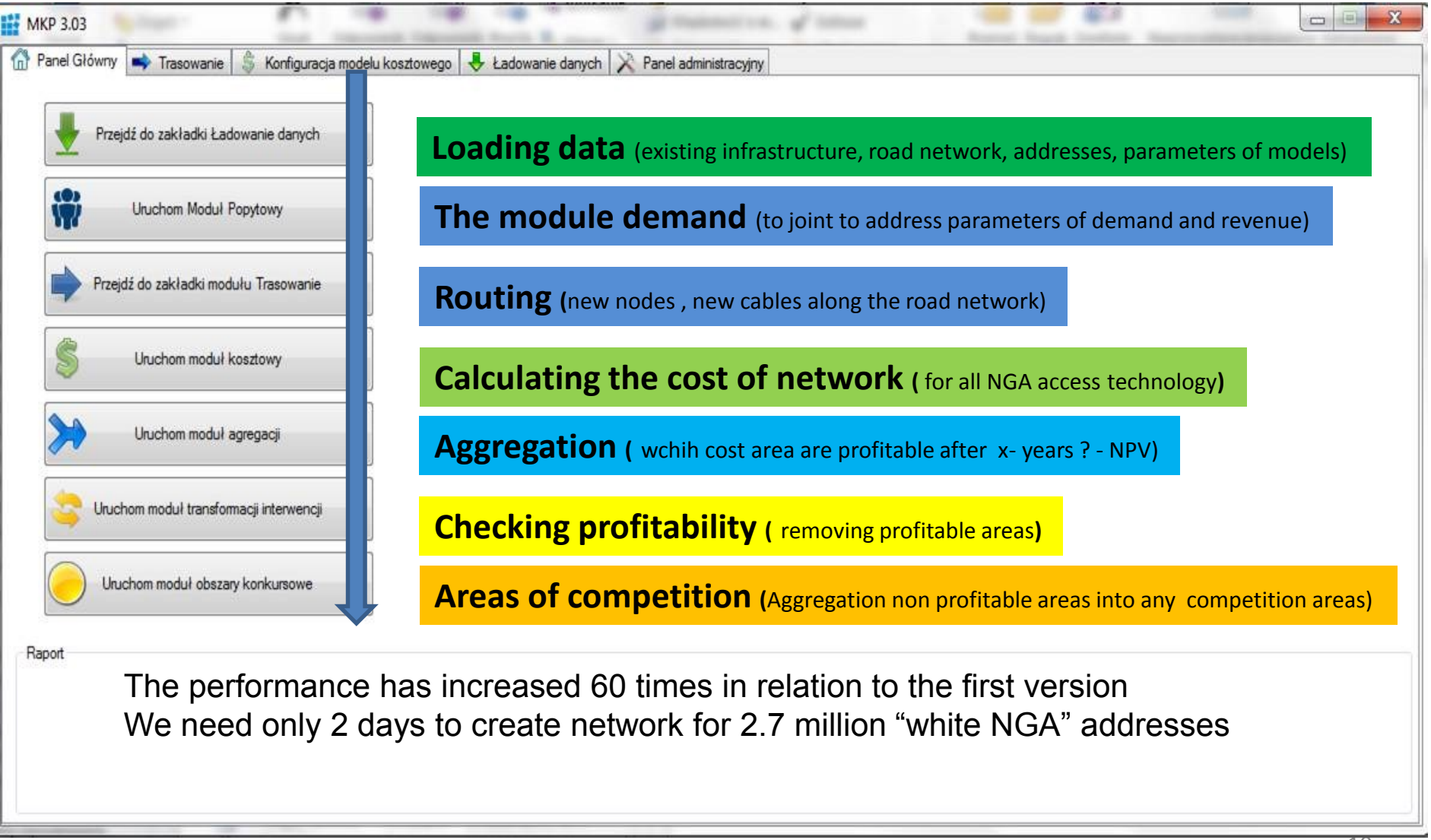
Competition Area

Final result : location of new nodes , cables, base stations etc.

HOW IT LOOKS IN PRACTICE: EXAMPLE OF AN INTERVENTION AREA



Improved tools - better performance based on data base, GIS only for visualisation



Loading data (existing infrastructure, road network, addresses, parameters of models)

The module demand (to joint to address parameters of demand and revenue)

Routing (new nodes , new cables along the road network)

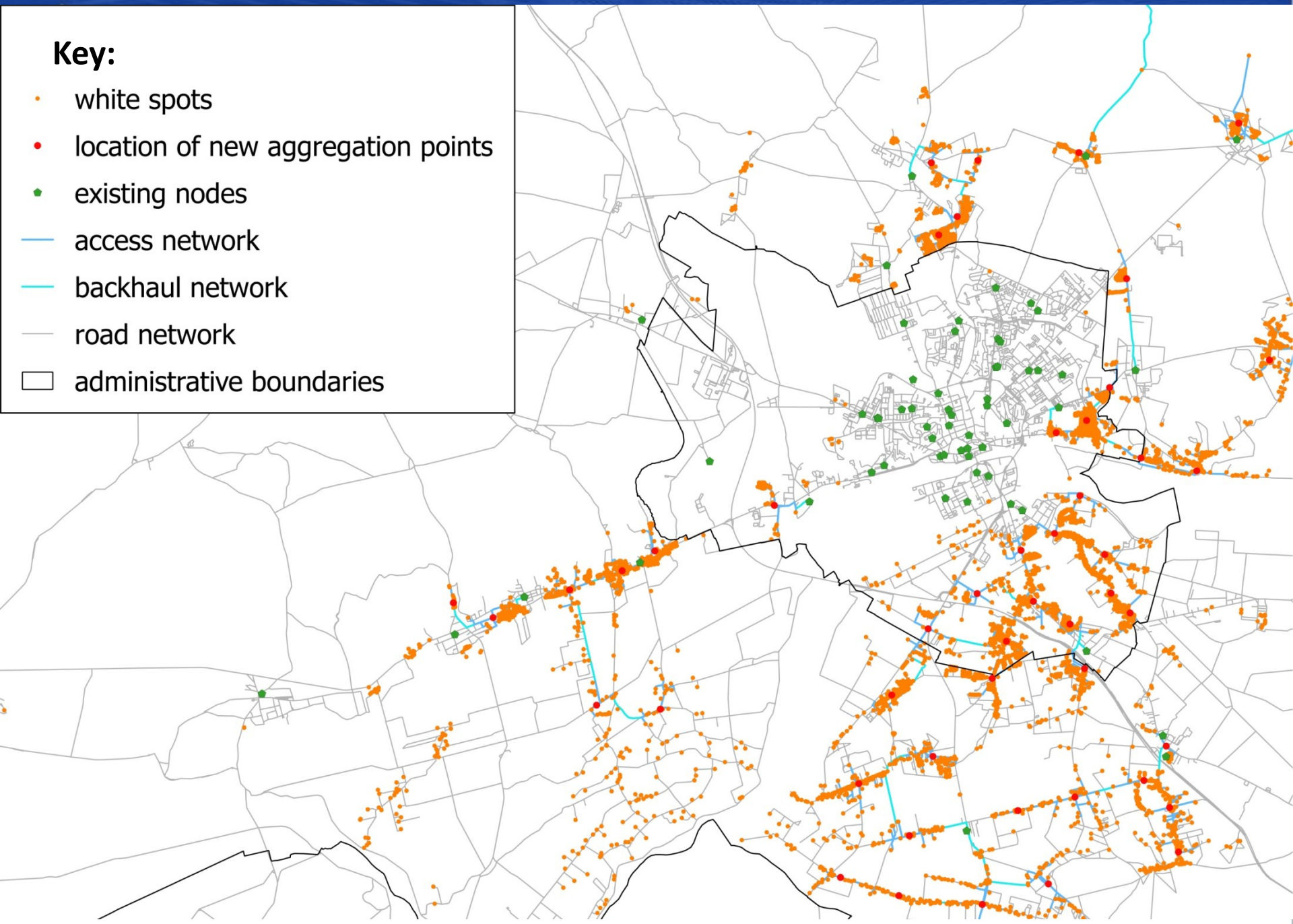
Calculating the cost of network (for all NGA access technology)

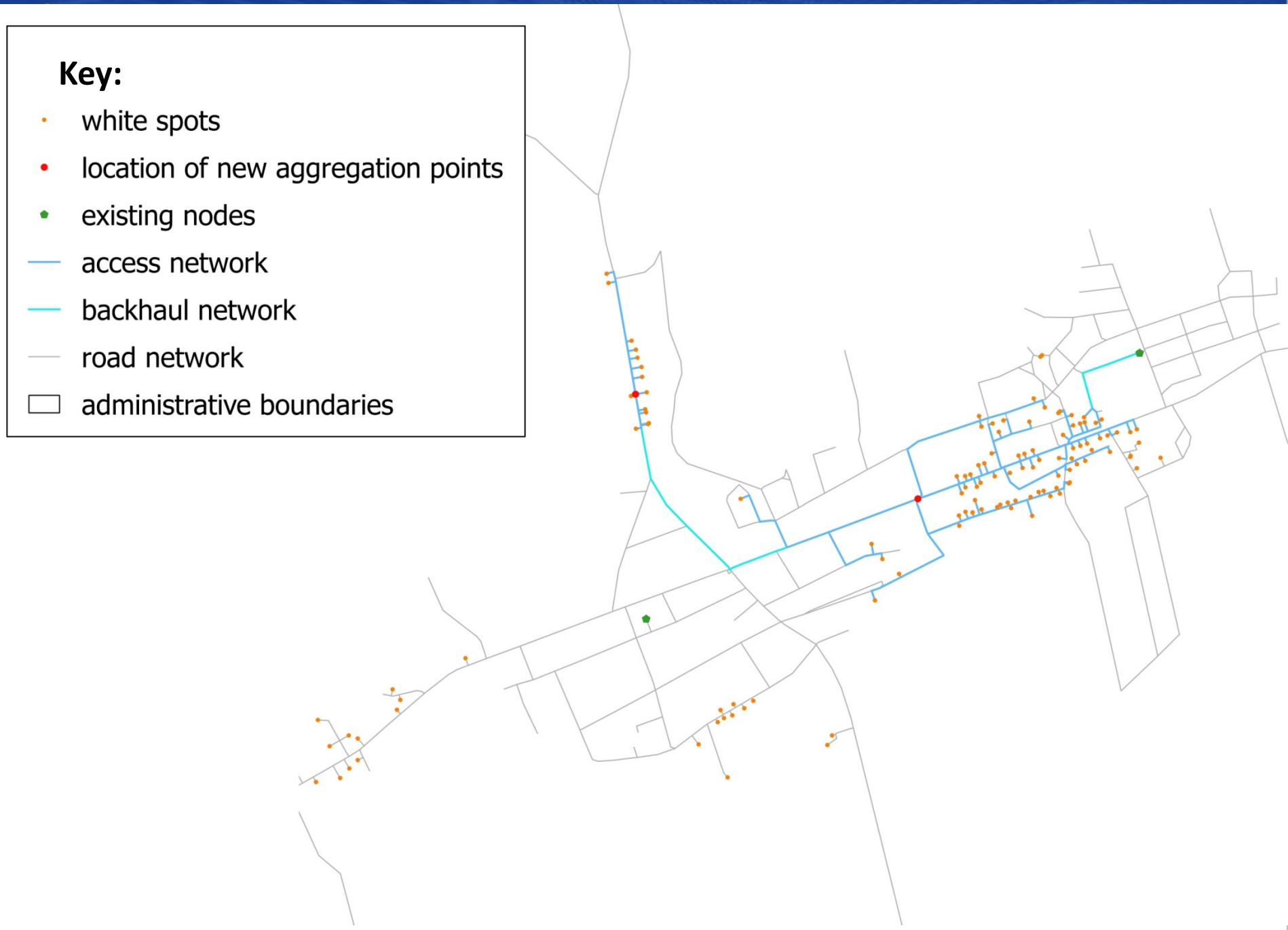
Aggregation (wchih cost area are profitable after x- years ? - NPV)

Checking profitability (removing profitable areas)

Areas of competition (Aggregation non profitable areas into any competition areas)

The performance has increased 60 times in relation to the first version
We need only 2 days to create network for 2.7 million “white NGA” addresses


Key:
white spots
location of new aggregation points
existing nodes
access network
backhaul network
road network
administrative boundaries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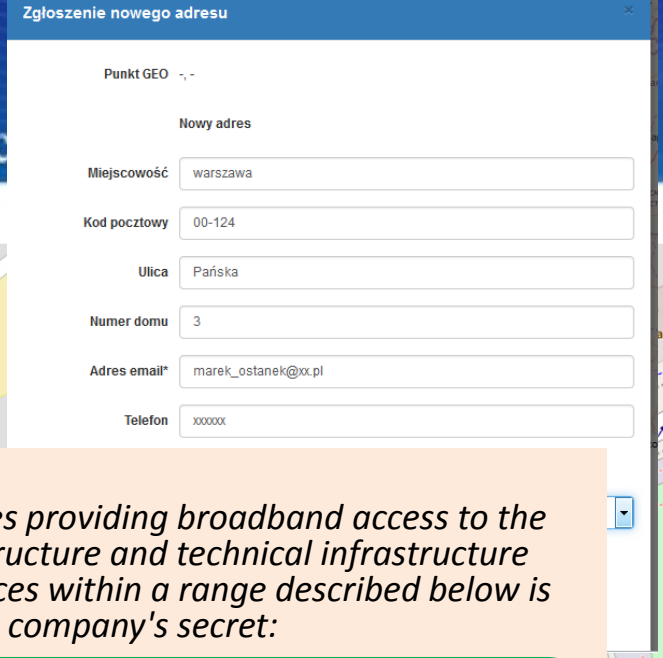
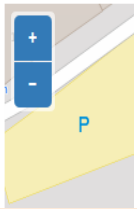
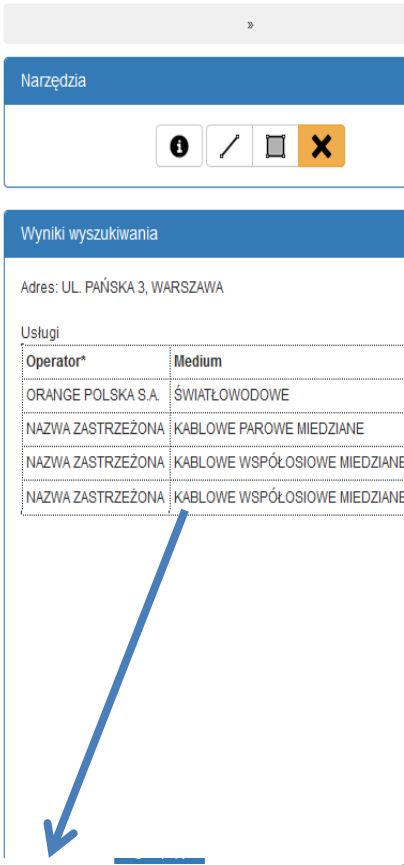
Next example „information for everyone”

Bandwidth and Access technology, provider’s demand for bandwith







Article 29 (6b) of the Mega-law

Information on data transmission services providing broadband access to the internet and telecommunications infrastructure and technical infrastructure which can be used to provide these services within a range described below is not subject to reservation because of the company's secret:

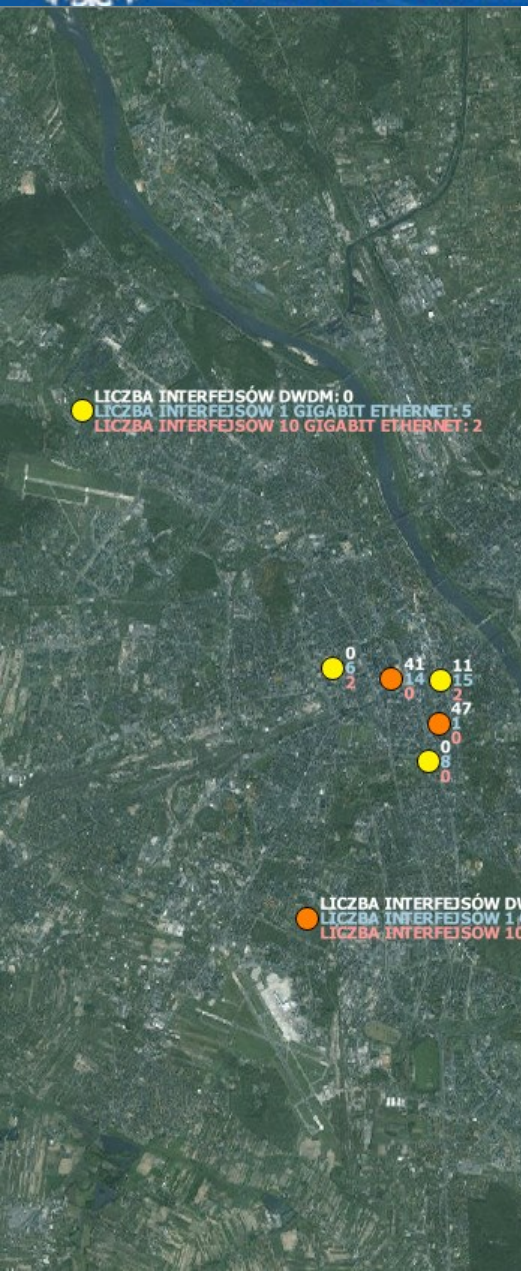
1) *contact details of the company which can provide services in a particular location;*
2) *address details of the building and other data identifying the location where the telecommunications provider can provide services;*
3) *technology of the available service;*
4) *the maximum throughput of Internet access services possible to offer to the end user;*

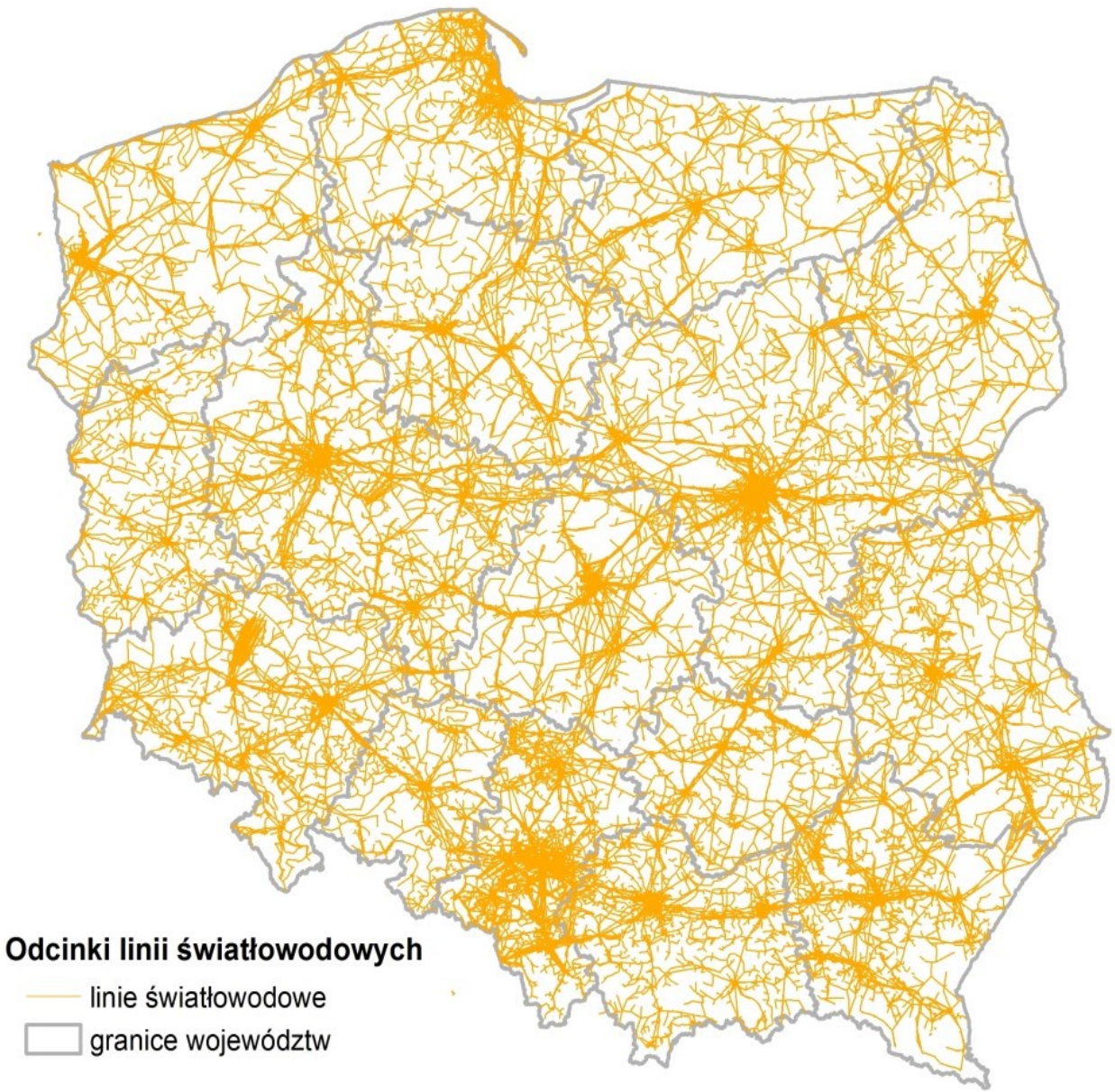
5) *telecommunications infrastructure and technical infrastructure which can be used to provide data services ensuring broadband access to the Internet.*

Operator*	Medium	Maks. prędkość	Telefon	Internet	TV
ORANGE POLSKA S.A.	ŚWIATŁOWODOWE	POWYŻEJ 100	TAK	TAK	TAK
NAZWA ZASTRZEŻONA	KABLOWE PAROWE MIEDZIANE	DO 10	NIE	TAK	TAK
NAZWA ZASTRZEŻONA	KABLOWE WSPÓŁOSIOWE MIEDZIA	POWYŻEJ 100	TAK	TAK	TAK
NAZWA ZASTRZEŻONA	KABLOWE WSPÓŁOSIOWE MIEDZIA	POWYŻEJ 100	NIE	TAK	TAK

This is not a secret of telecom operators

Threats?


LICZBA INTERFEJSÓW DWDM: 0
LICZBA INTERFEJSÓW 1 GIGABIT ETHERNET: 5
LICZBA INTERFEJSÓW 10 GIGABIT ETHERNET: 2
0
6
2
41
14
0
11
15
2
47
1
0
0
3
0
LICZBA INTERFEJSÓW D
LICZBA INTERFEJSÓW 1
LICZBA INTERFEJSÓW 10


Odcinki linii światłowodowych
linie światłowodowe
granice województw

Thank you

e-mail: M.Ostanek@uke.gov.pl