BROADBAND DEPLOYMENT: The example of Lithuania

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BEREC – EMERG – EAPEREG - REGULATEL SUMMIT
Challenges for Telecoms in the new Internet ecosystem
2-3 July 2015, Barcelona

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Lithuania. profile

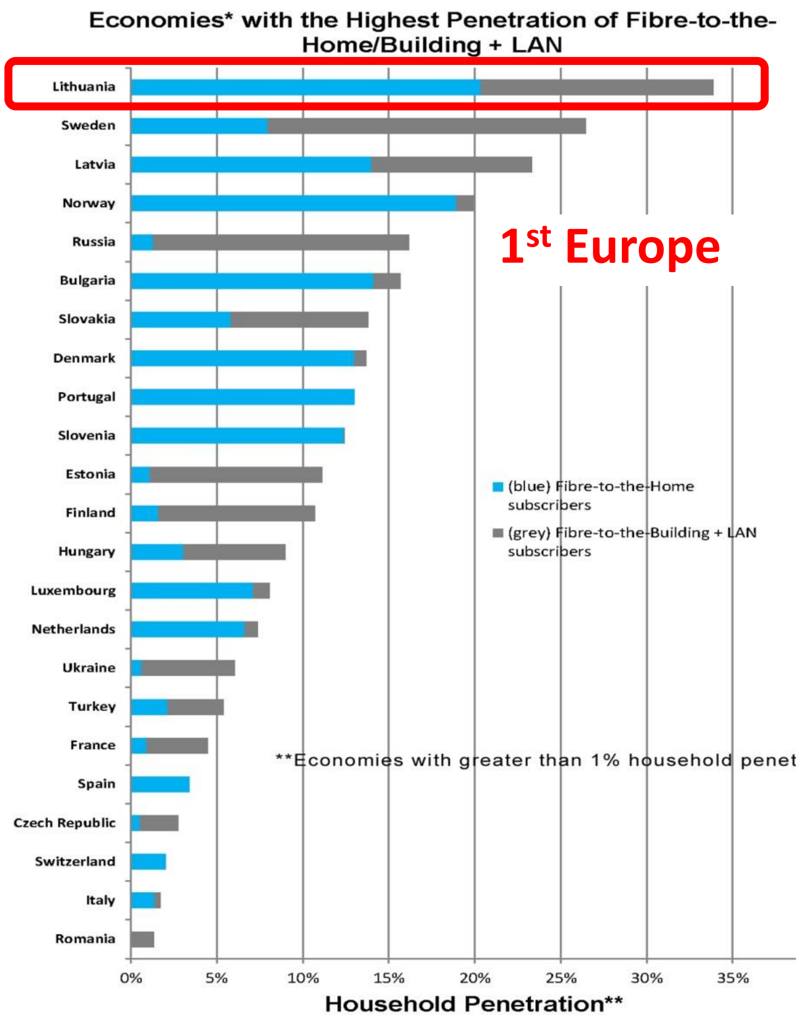
Population: ~3 million

Territory: 65.000 km^2

Rural population: ~34%

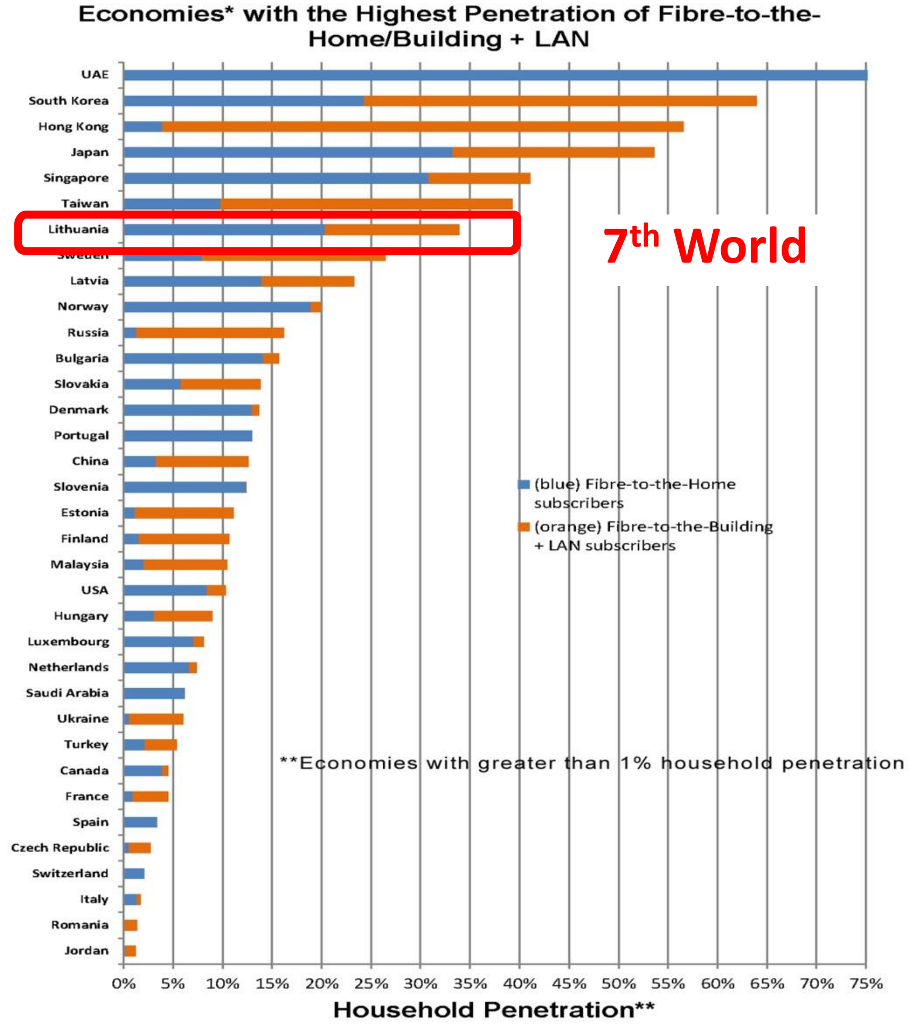
BB in Lithuania - situation today

LT today: High penetration of FTTH/FTTB



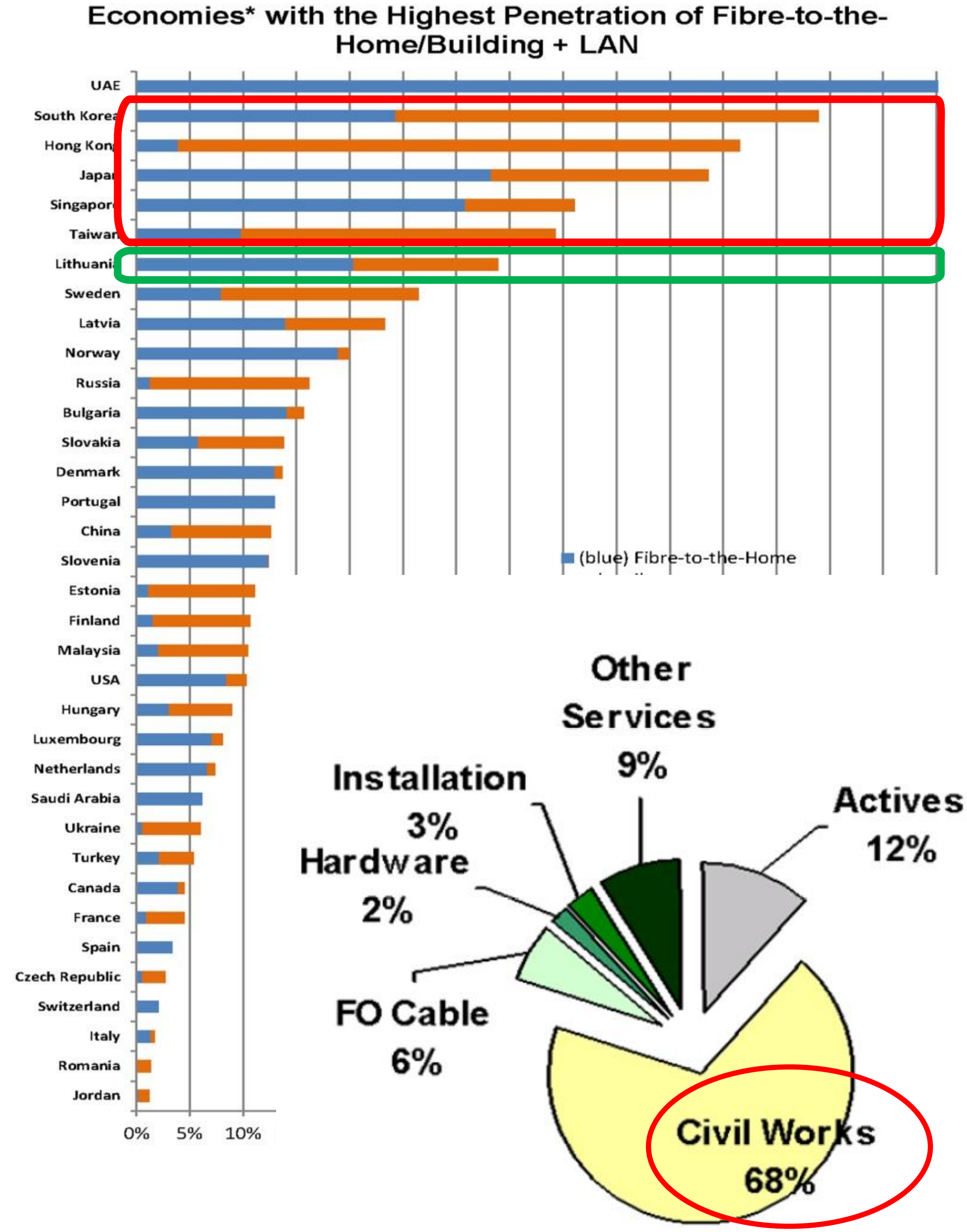
December 2013 European Ranking
Source: IDATE and FTTH Council Europe
February 2014

*Economies w
200,000



December 2013 Ranking
Source: Fibre to the Home Councils
February 2014

*Economies with at least 200,000 households



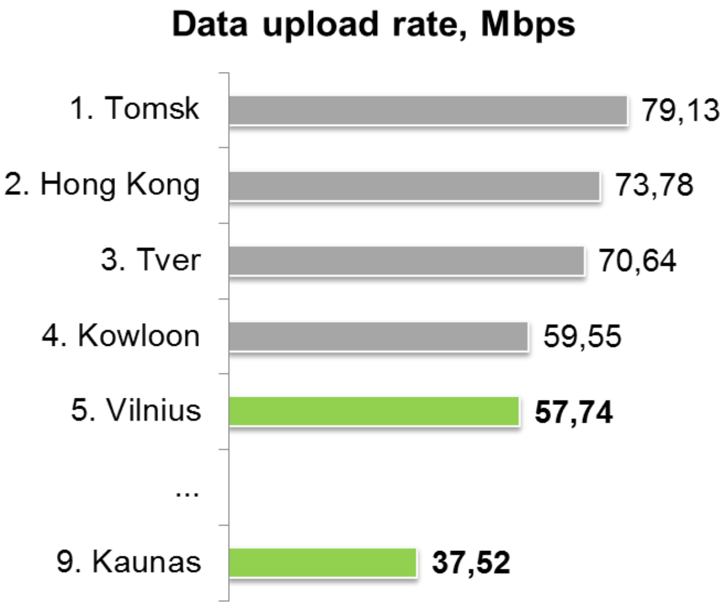
December 2013 Ranking
Source: Fibre to the Home Councils
February 2014

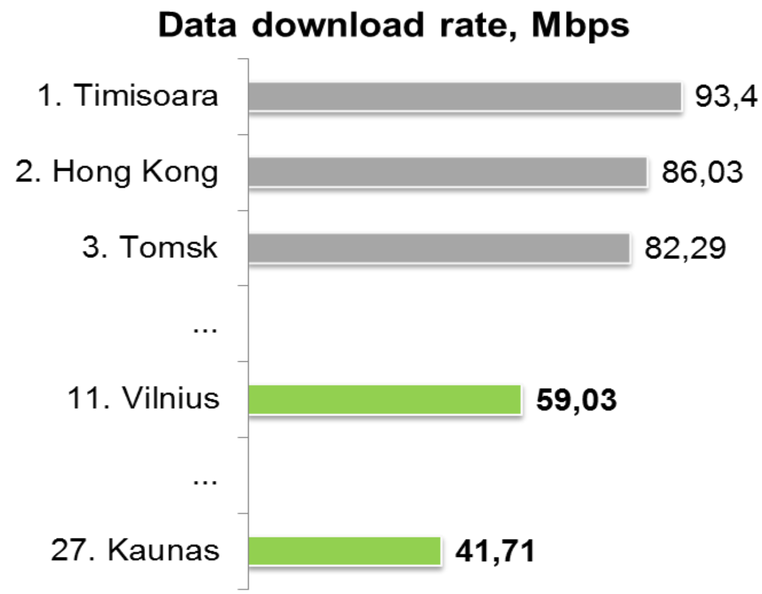
Source: Corning & FTTH Council Europe

Typical initial capex distribution for Green-field FTTH deployments

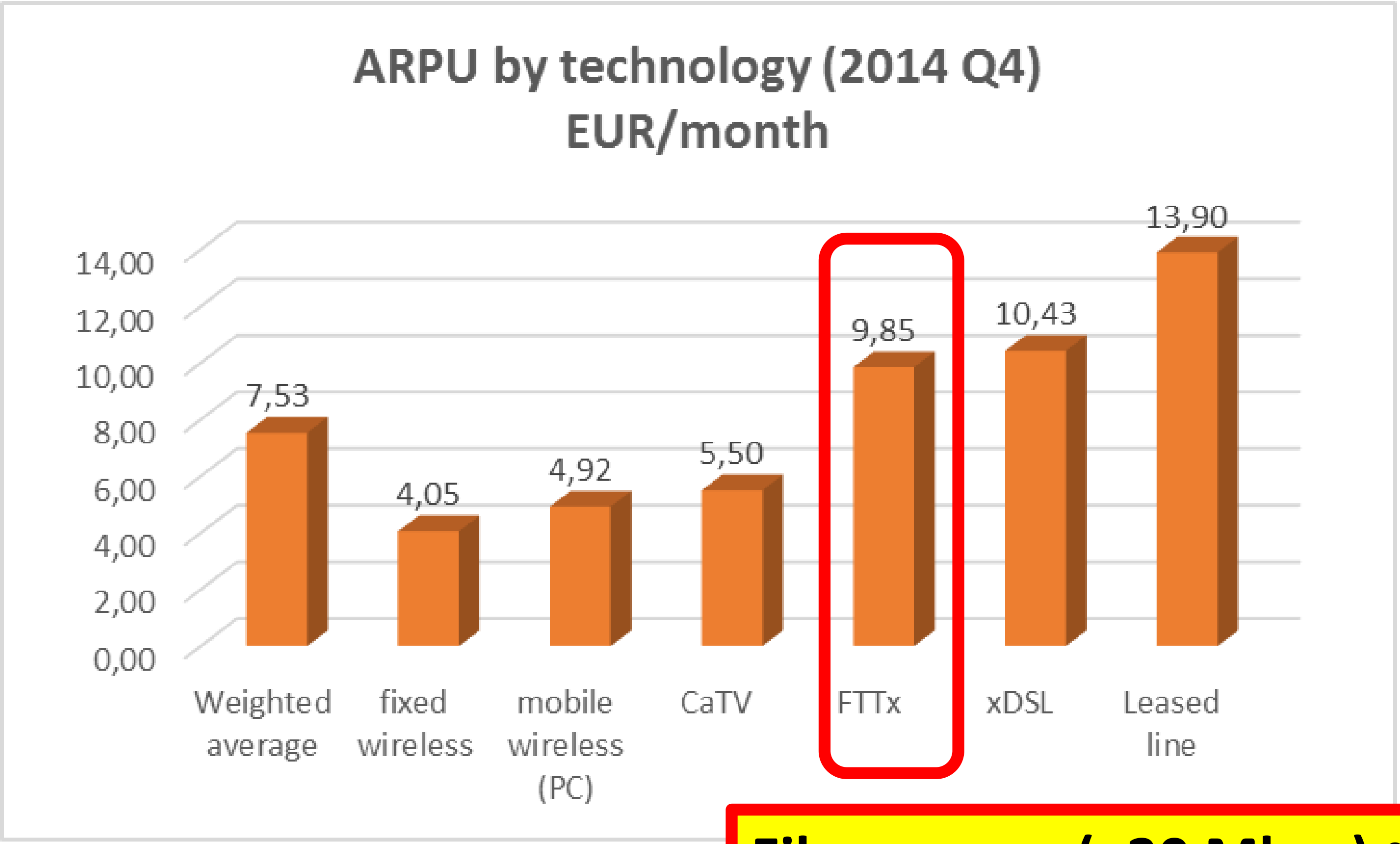
LT today: high speed BB

Vilnius and Kaunas – among cities with the fastest data upload and download rates (May 2014)



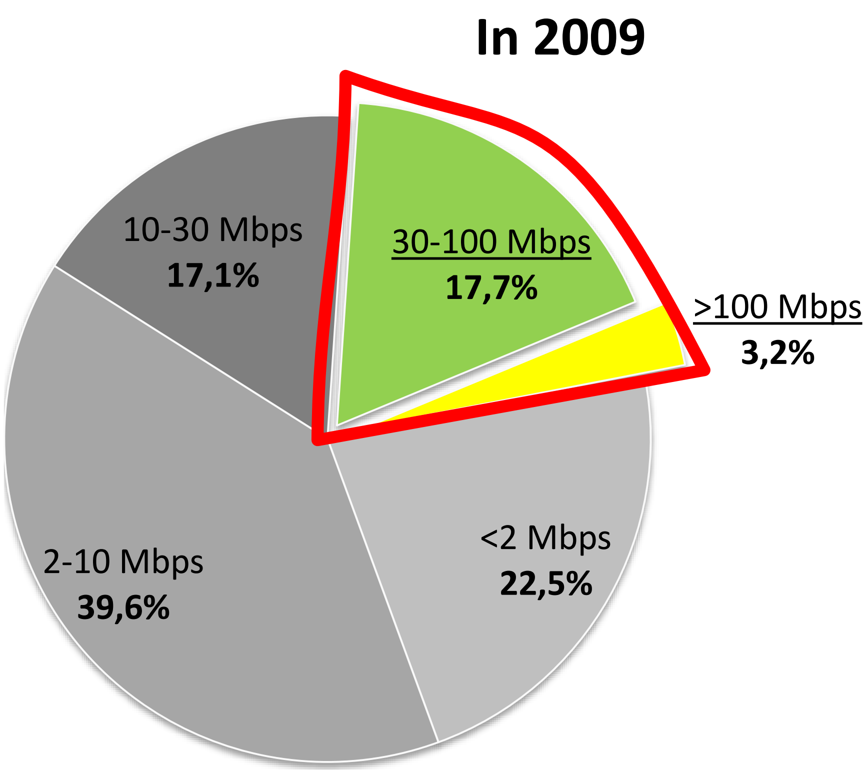


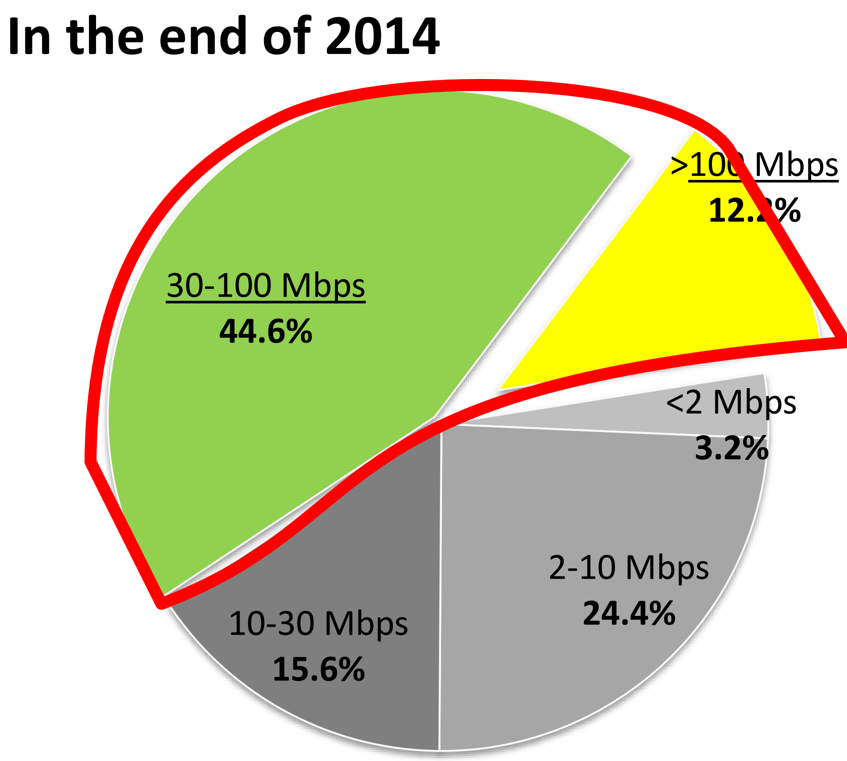
LT today: very low prices



Fibre access (>30 Mbps) ~ 10 EUR/month

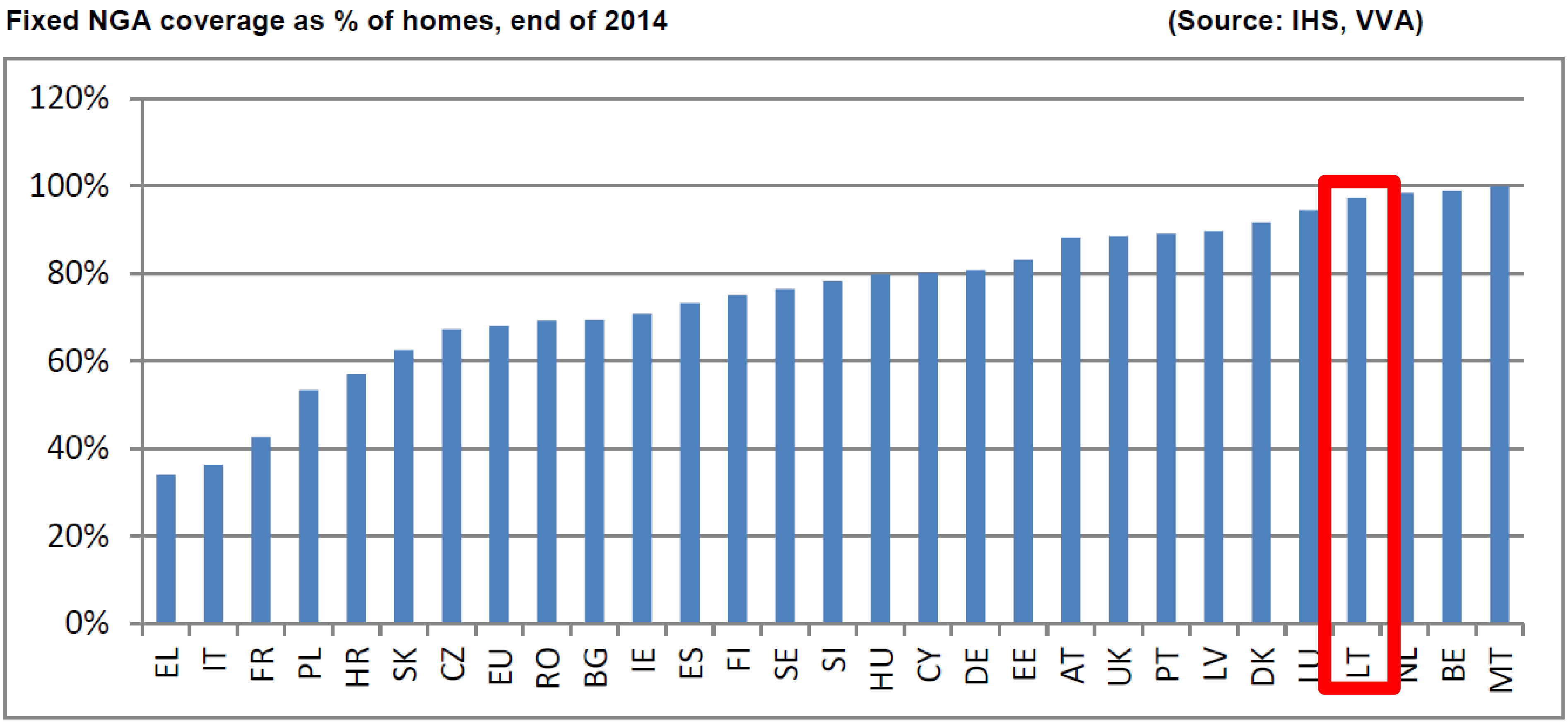
LT today: high speed internet usage





> 30 Mbps – 57 %

LT today: high NGA penetration



Source: European Commission 19th report

BB in Lithuania - insights for reasons

BB development factors

<ins>**5 main reasons:**</ins>

1. **Shared use** of infrastructure.

2. **Cable TV operators** – the first to benefit from open infrastructure.

3. **Regulatory measures** on incumbent operator.

4. **Wireless broadband** (M2F competition)

5. **State aid** (rural connectivity - RAIN projects)

1. Shared use of infrastructure

1998

Law on Telecommu-nications

2002

Regulations on shared use *of telecommunications* infrastructure

2004

Law on Electronic Communications
<u>Symmetric Obligation to share</u> passive infrastructure suitable for construction of electronic communications networks

2005

Detailed Regulation on
1. Construction of network infrastructure
2. Infrastructure sharing

2009/2010

Discussions on possible introduction of **co-building procedure** within Telecom sector (was not introduced)

2010

Methodology to calculate free space available in the tube / duct

2012

introduction of **SMP regulation** on Incumbent‘s ducts

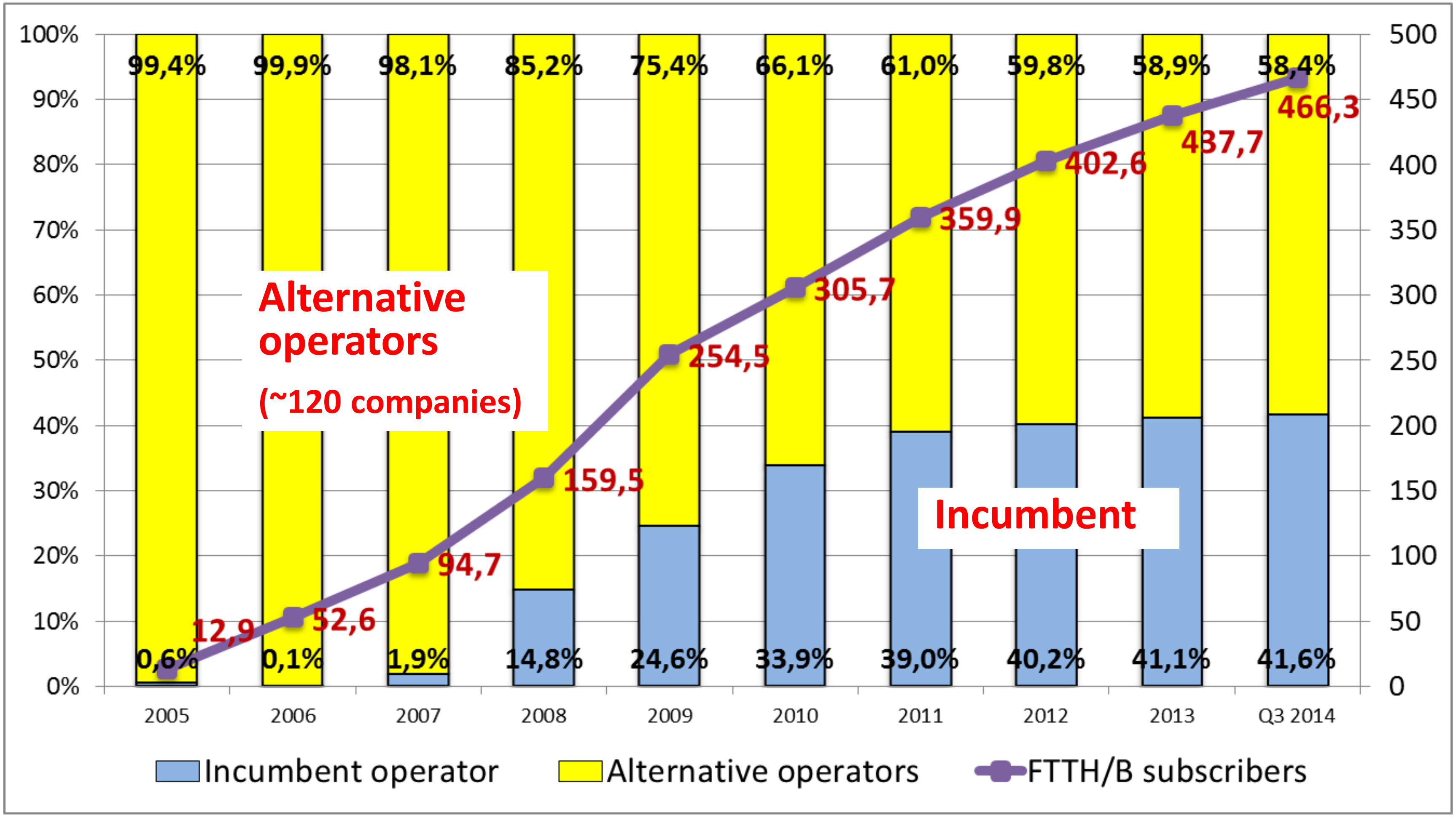
2015

Attempt to increase Duct prices

2016

All infrastructures: Directive 2014/61/ES

2. Cable TV (altNets) – first movers



3. Asymmetrical regulation on Incumbent

- First movers were cable TV operators
- Incumbent started investments into optic fibre since 2007.
- Incumbent started to restrict access to its infrastructure.
- RRT role:

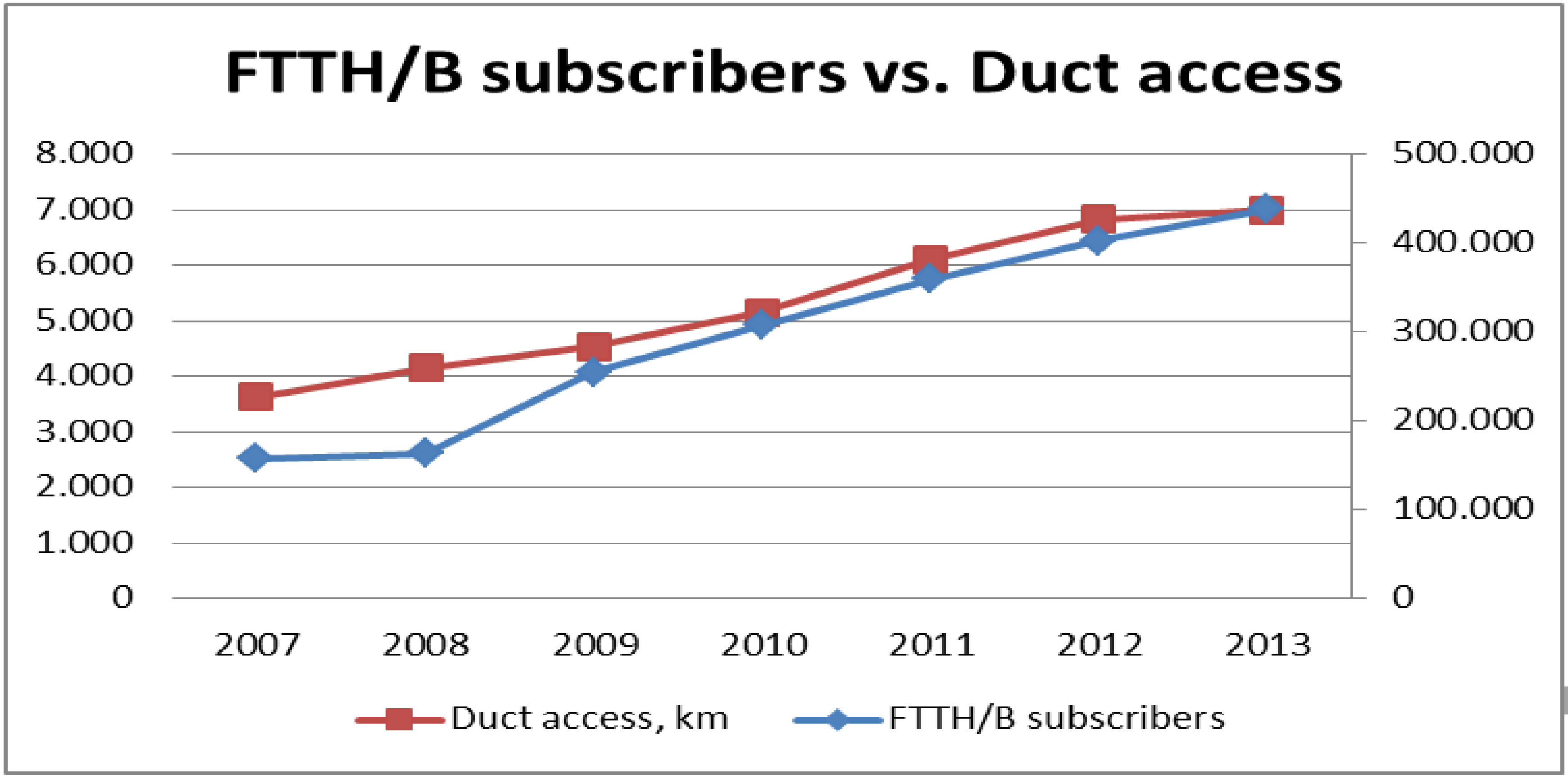
Dispute resolutions: between cable TV operators and incumbent operator (in 2002 first dispute on fees for the use of telecommunications equipment).

Market analysis: strengthened symmetric regulation and imposed obligations on SMP operator for **duct access (access, non-discrimination, transparency, price control and cost accounting, and accounting separation**).

Duct access is the main access product used

Duct access prices (since 2010):

- 27,80 EUR per km (monthly)
- 141,91 EUR per km (Technical investigation)



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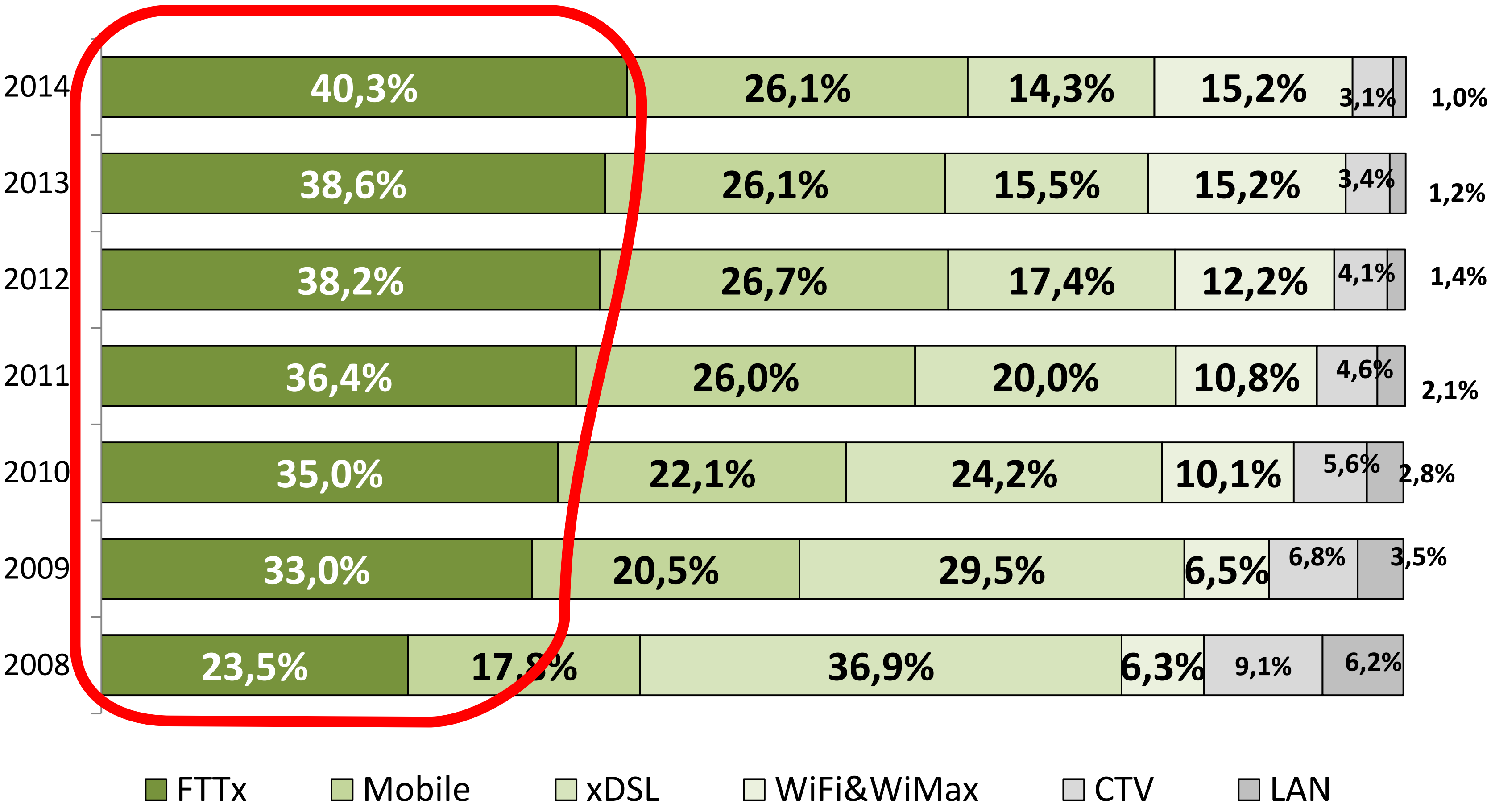
LT: infrastructure competition

FTTx – leading technology since 2008



4. Increse of 4G networks

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Coverage of wireless BB

Statistic	National
Population	3,007,758
Persons per household	2.3
Rural proportion	34.3%

- 3G/HSPA coverage increased by 0.2% in 2011-2013.
- 4G/Wimax coverage increased by 25% in 2011-2013.
- 4G/LTE coverage increased by 17.2% in 2011-2013.

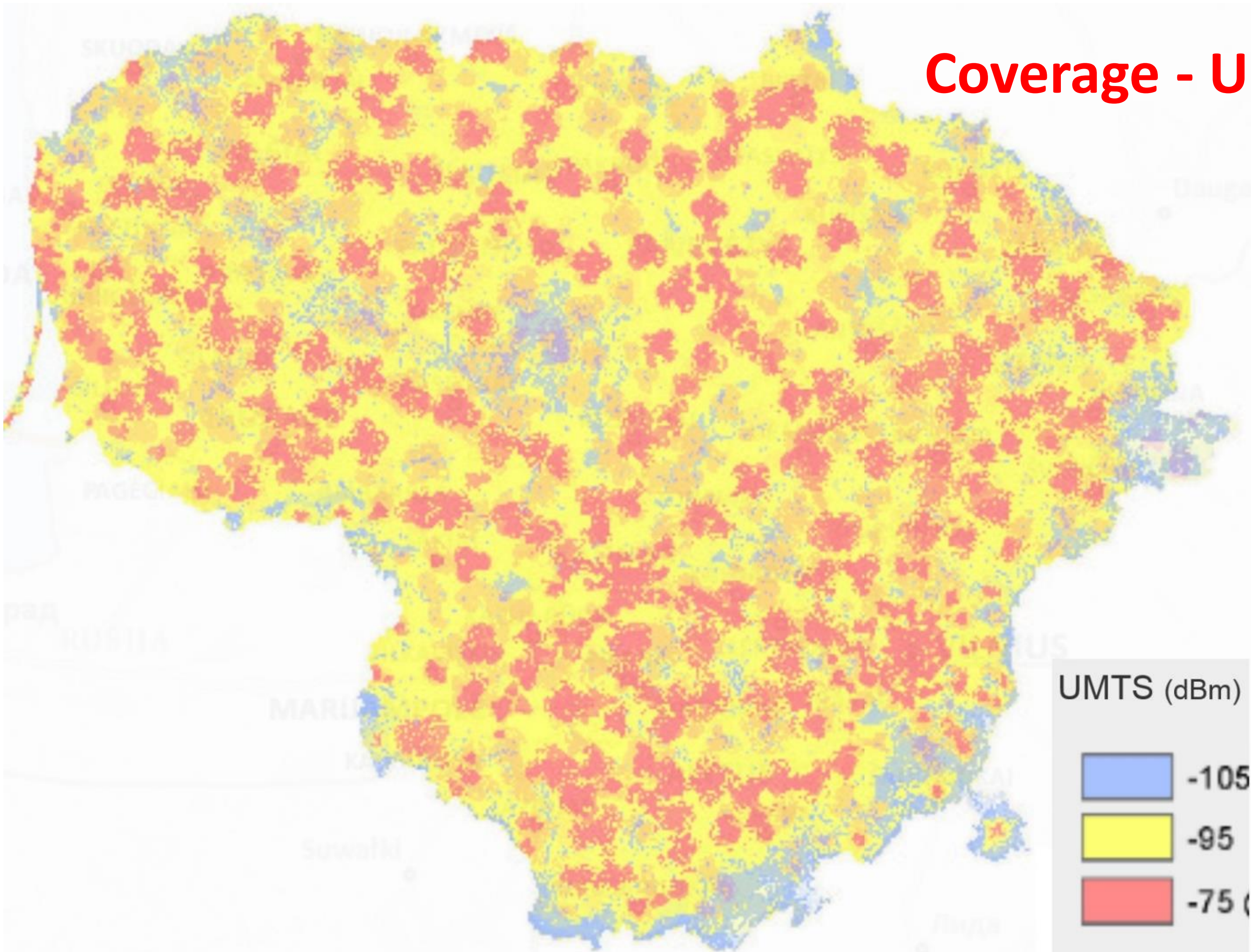
Today 4G/LTE coverage is about 80% !

	Lithuania 2013		Lithuania 2012		Lithuania 2011		EU28 2013	
Technology	Total	Rural	Total	Rural	Total	Rural	Total	Rural
DSL	69.1%	15.2%	68.8%	15.1%	68.5%	14.8%	93.5%	82.3%
VDSL	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.2%	11.1%
FTTP	93.7%	55.3%	80.0%	42.2%	59.4%	22.1%	14.5%	4.2%
WiMAX	85.0%	82.0%	84.9%	81.4%	60.0%	60.0%	19.7%	17.6%
Cable	53.3%	0.5%	53.0%	0.3%	52.8%	0.3%	43.0%	7.8%
DOCSIS 3.0	42.8%	0.0%	42.2%	0.0%	41.7%	0.0%	41.6%	7.0%
HSPA	95.2%	91.0%	95.1%	85.7%	95.0%	85.6%	97.1%	85.5%
LTE	29.3%	0.0%	18.7%	0.0%	12.1%	0.0%	59.1%	14.9%
Satellite	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	99.3%	99.3%
Overall broadband	98.6%	95.5%	97.8%	93.5%	n/a	n/a	99.4%	96.7%
Overall fixed broadband	97.1%	91.0%	96.8%	90.7%	88.4%	70.1%	97.2%	89.8%
NGA broadband	96.7%	55.3%	80.0%	42.2%	62.2%	22.1%	62.0%	18.1%

Source: European Commission annual report " Broadband Coverage in Europe 2013 "

4. UMTS network coverage

Coverage - UMTS



Signal:

Weak

Strong

4. Rapid increse of 4G networks

LTE 800 Mhz
stations – **1000**;

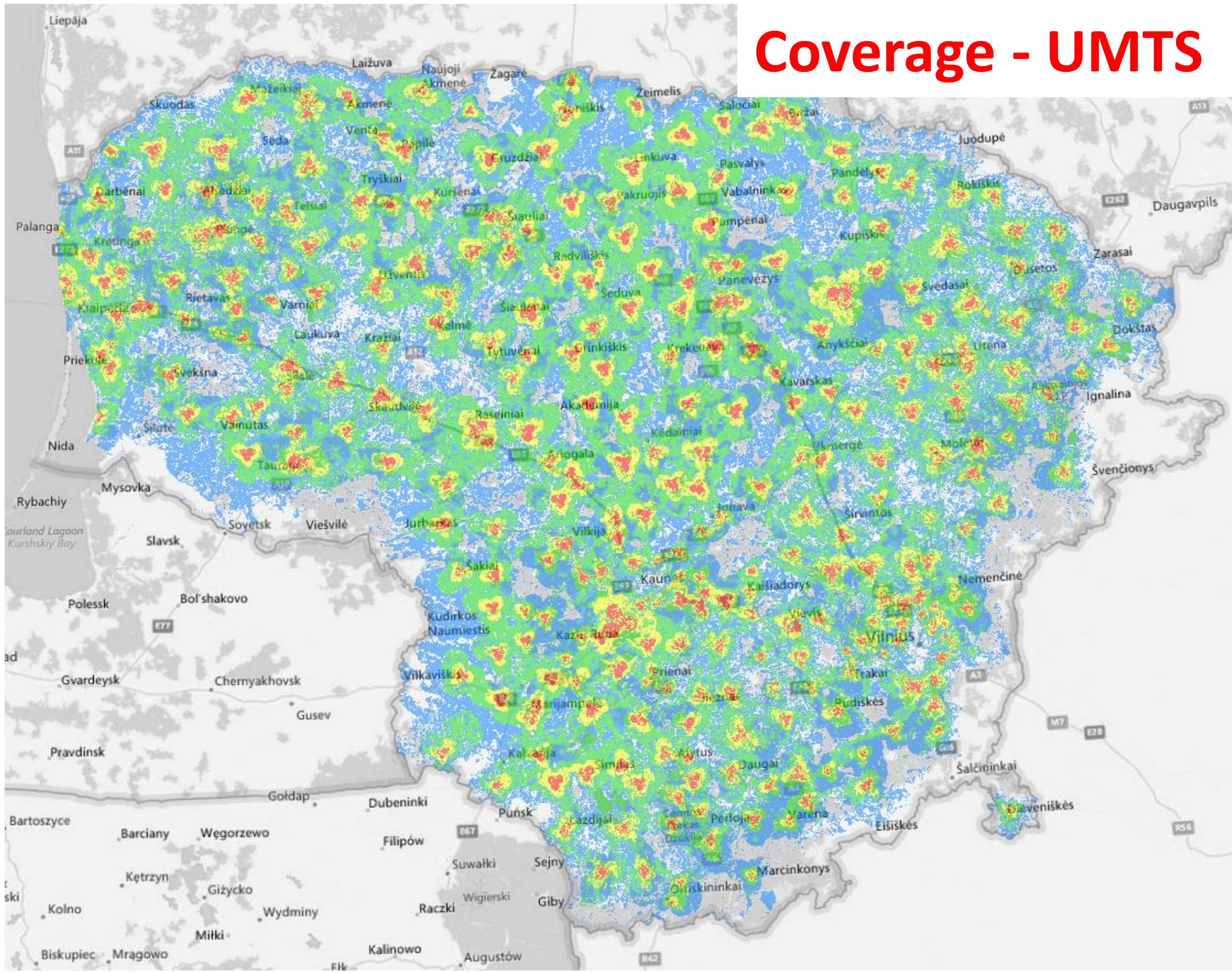
LTE 1800 Mhz
station – **600**;

LTE 2600 Mhz
stations - **60**.

Coverage (territory):

78 %	-115 dBm
45 %	-105 dBm
15 %	-95 dBm
4 %	-85 dBm

Coverage - UMTS



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5. State aid (Rural connectivity)

- RAIN projects: eliminate "digital divide" between rural and urban areas

Develop **broadband** Internet via connected **"backbone" networks** in **rural areas** where infrastructure is absent or insufficient

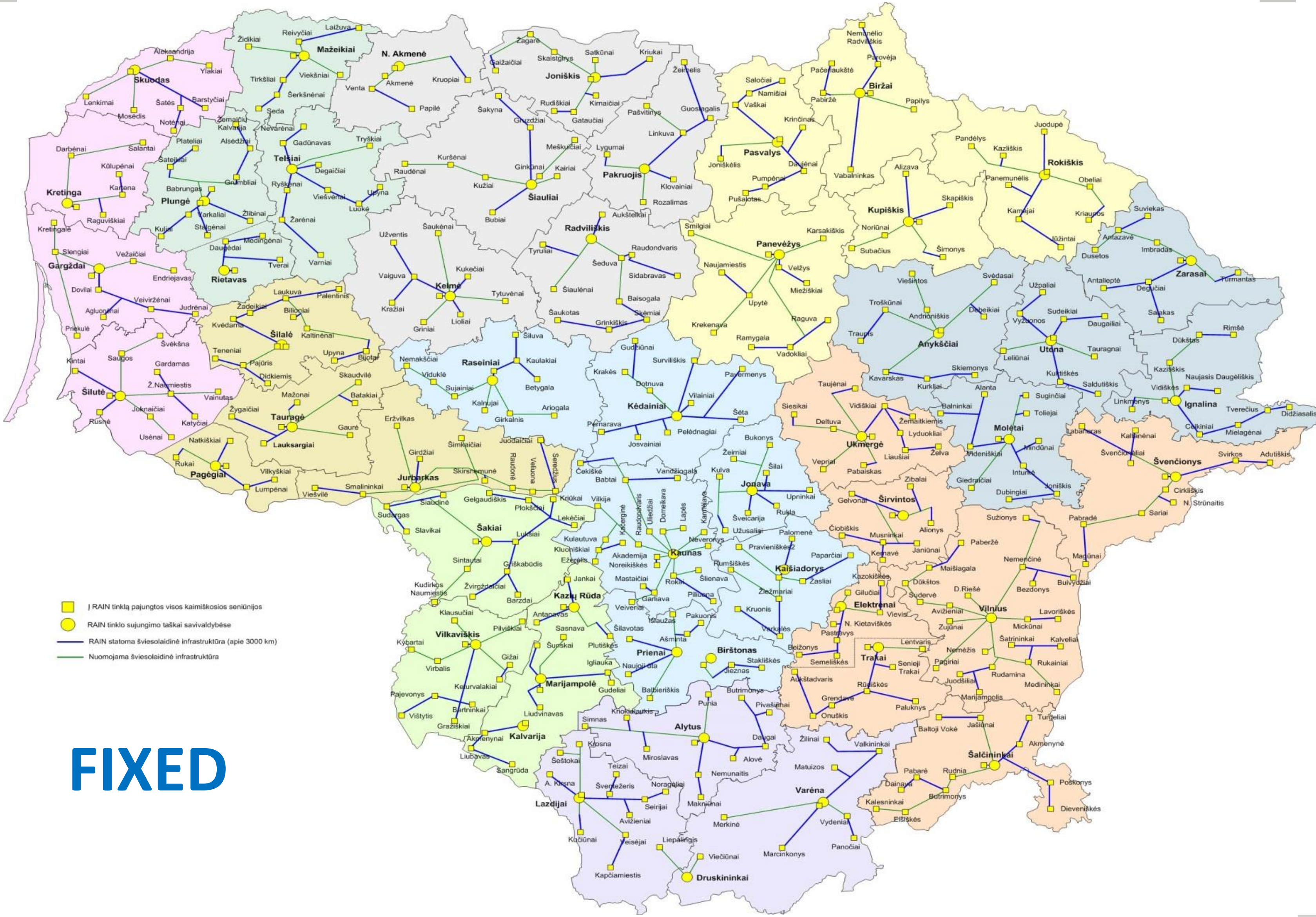
- RAIN (2005-2008): 3.357 km fibre backbone
- RAIN-2 (2009-2013): 4.915 km fibre backbone (connected)
- PRIP (2012-...): 360 km fibre access lines (400 points)

FIXED

- RAIN-3 (2016?): ~600 new towers to share

Wireless

RAIN-1 (**FIXED**: fibre backhaul – scattered)



FIXED

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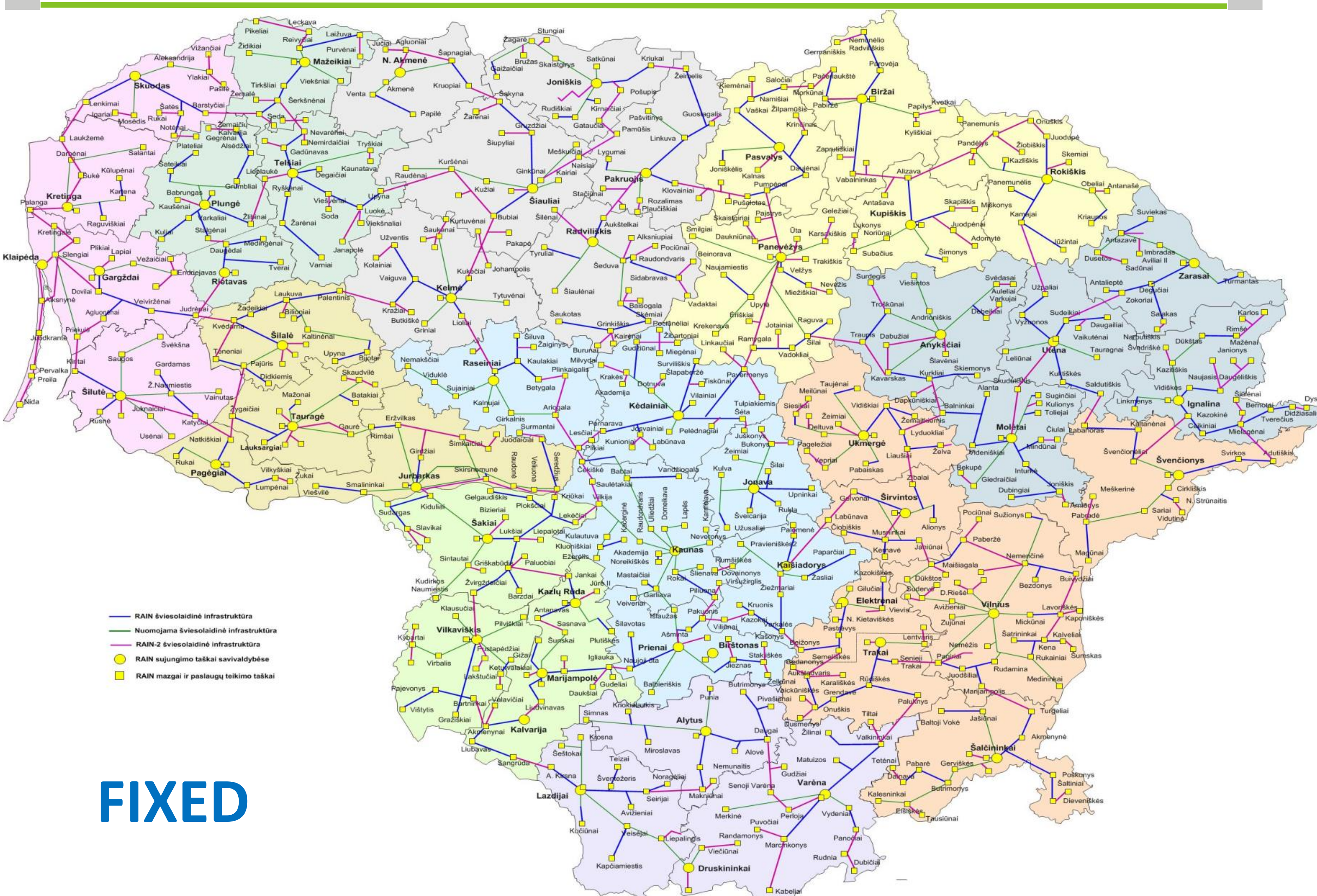
RAIN-2 (**FIXED**: fibre backhaul - connected)



FIXED

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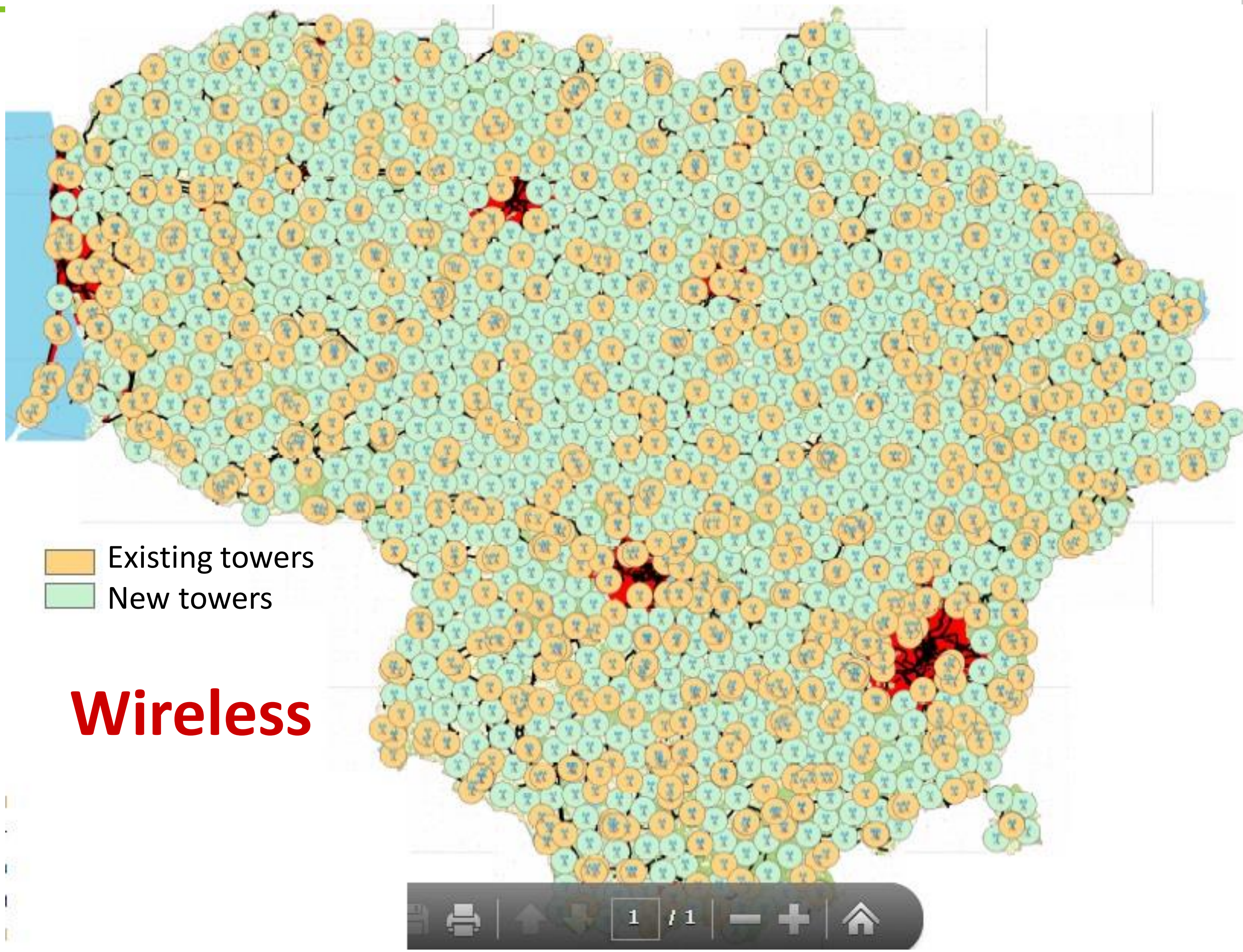
RAIN-3 (**WIRELESS**: new NGA coverage **towers**)



RRT: BB promotion (supply side actions)

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RRT actions

in the BB market

Radio frequencies

I. SYMMETRICAL measures

1) Joint development and Infrastructure sharing (since 1998)
2) Construction of competition-proof infrastructure (min. size of ducts, inlets, in-house cabling)
3) Increasing visibility:
    1) Infrastructure maps online;
    2) Broadband map.

II. ASYMMETRICAL measures

SMP analysis:

Market 4 (22-06-2011):

- Full set of obligations (copper+fibre)
- Access to ducts

Market 5 (21-11-2012):

- Full set of obligations (copper+fibre)

LT: Regulator‘s role in the nearest future

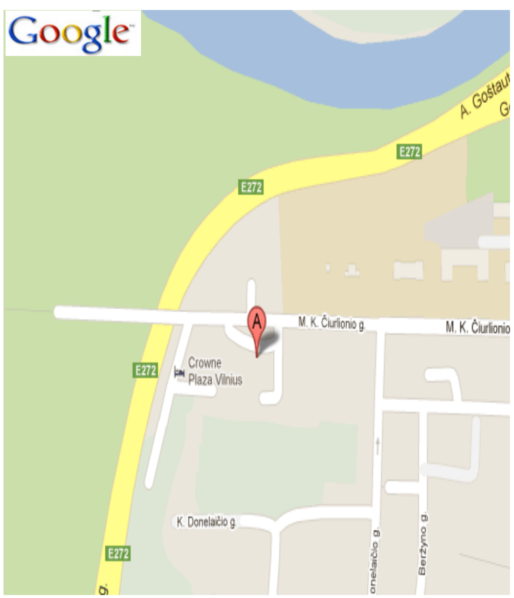
- **RRT: Maintain infrastructure sharing** system open
  - Symmetric regulations, dispute resolution
  - imposing specific **obligations on SMP** operators
- **RRT:** Go further - **ease even more the conditions** for operators to invest into fibre:
  - online **infrastructure MAP** – RRT as a mediator between municipalities and operators
  - support the initiative of **digitalisation** of all underground infrastructure maps in LT (EU funding?)
  - **Empower end-user**: measurement MAP of mobile BB
- **RRT: effectively manage radio spectrum** use

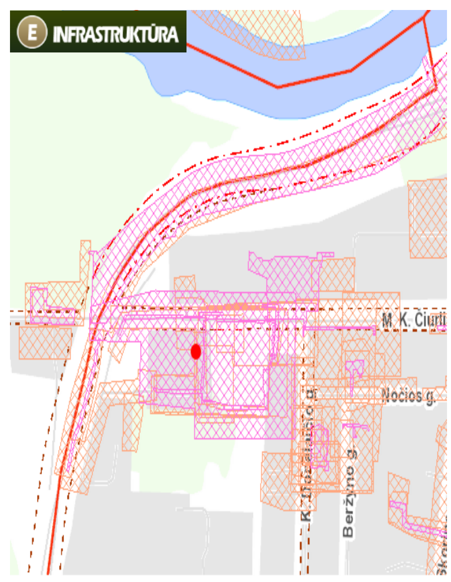
Infrastructure map

Project purpose: provide information for operators

- Information about existing electronic communication networks infrastructure in municipality
- Information about prospects of building electronic communication networks

Why Google maps is not enough?

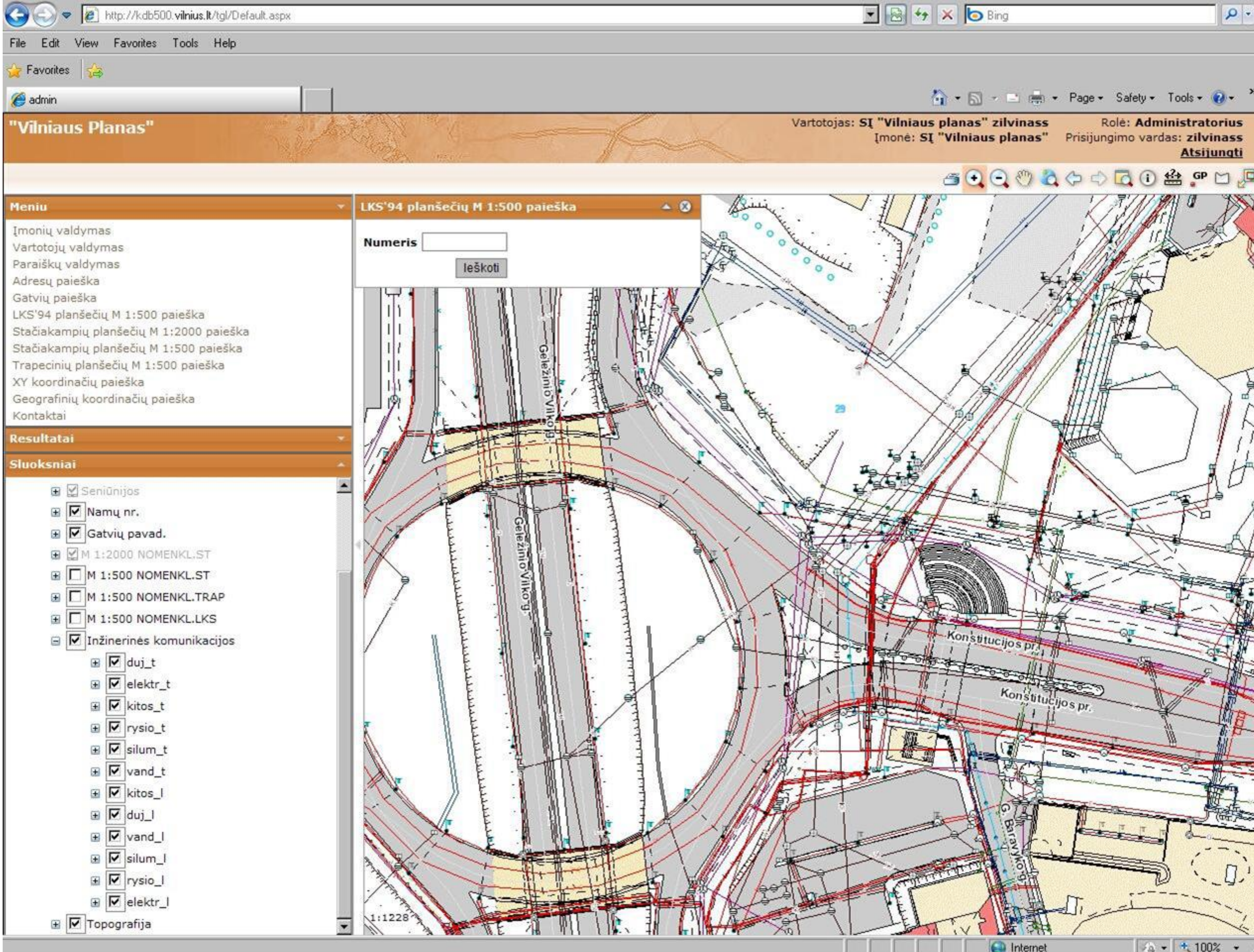




Stages:

1. Vilnius
2. Klaipėda
3. Kaunas
4. Other municipalities

RKK map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Vartotojas: SĮ "Vilniaus planas" zilvinass
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M 1:2000 NOMENKL.ST
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M 1:500 NOMENKL.TRAP
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Internet
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Thank You! Questions?

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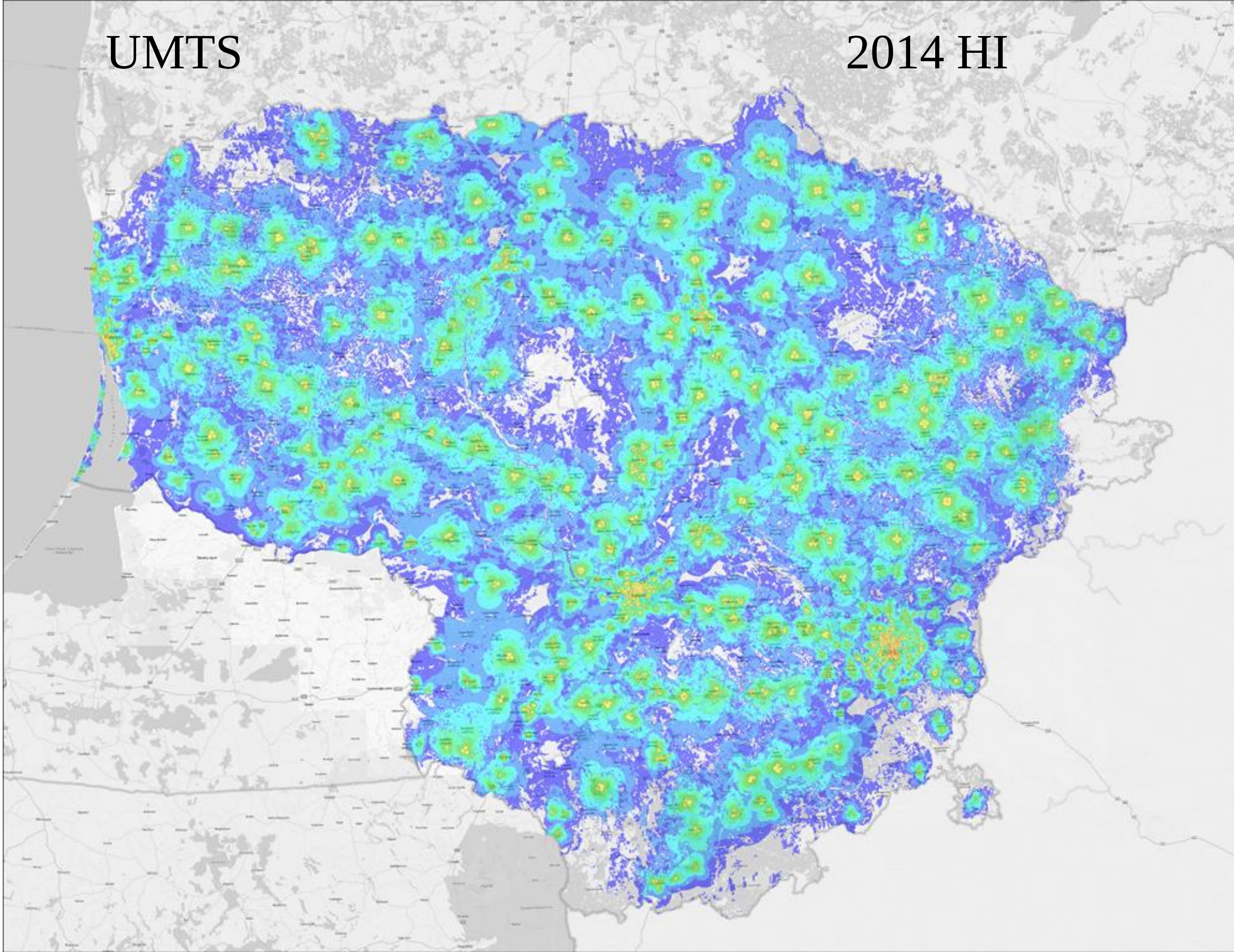
www.rrt.lt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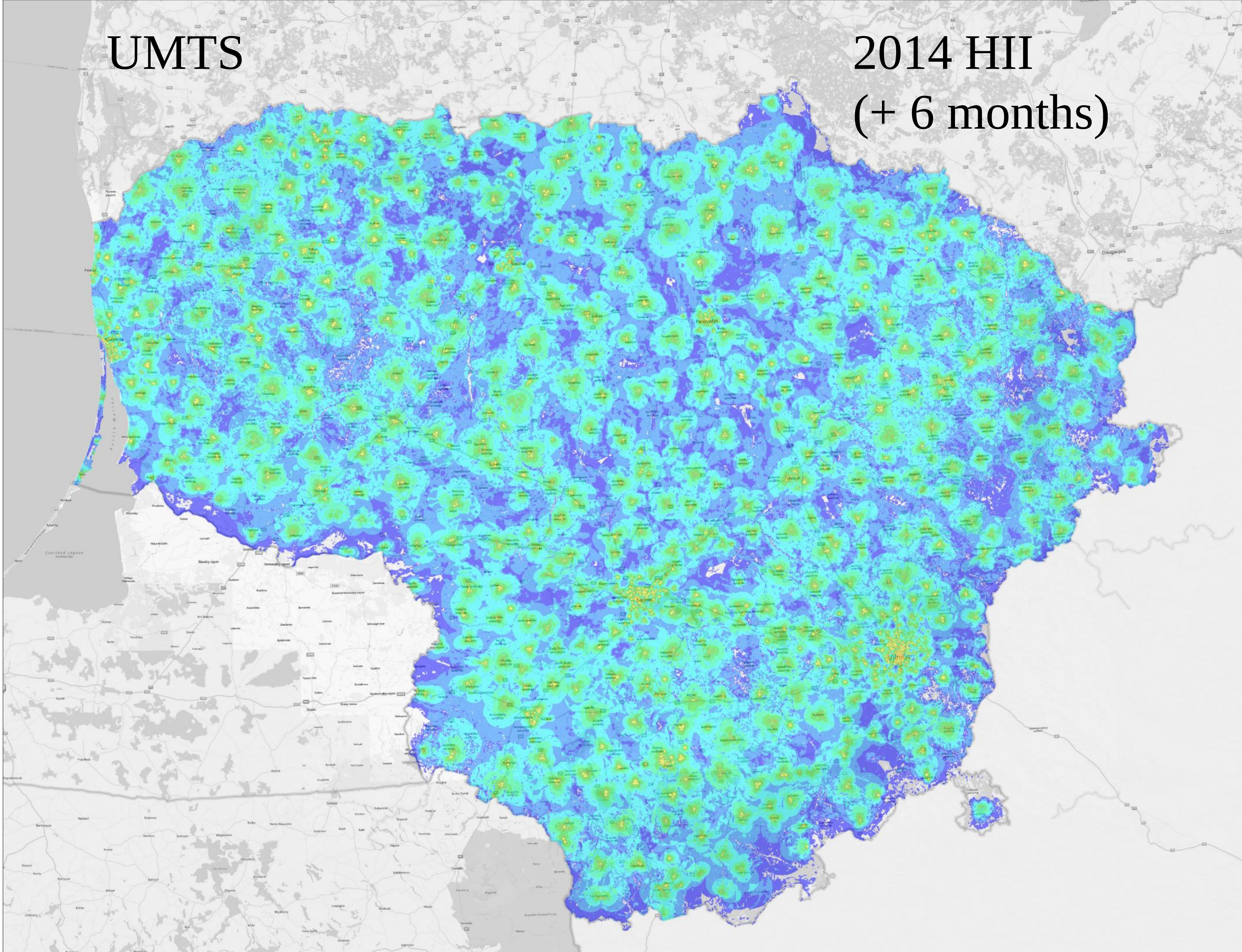
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