

Fiber optic (access) network

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AGENDA

1

INTRODUCTION

2

ORDINANCE ON FIBER OPTIC DISTRIBUTION NETWORKS

3

CONCLUSION

Deployment

Three main levers:

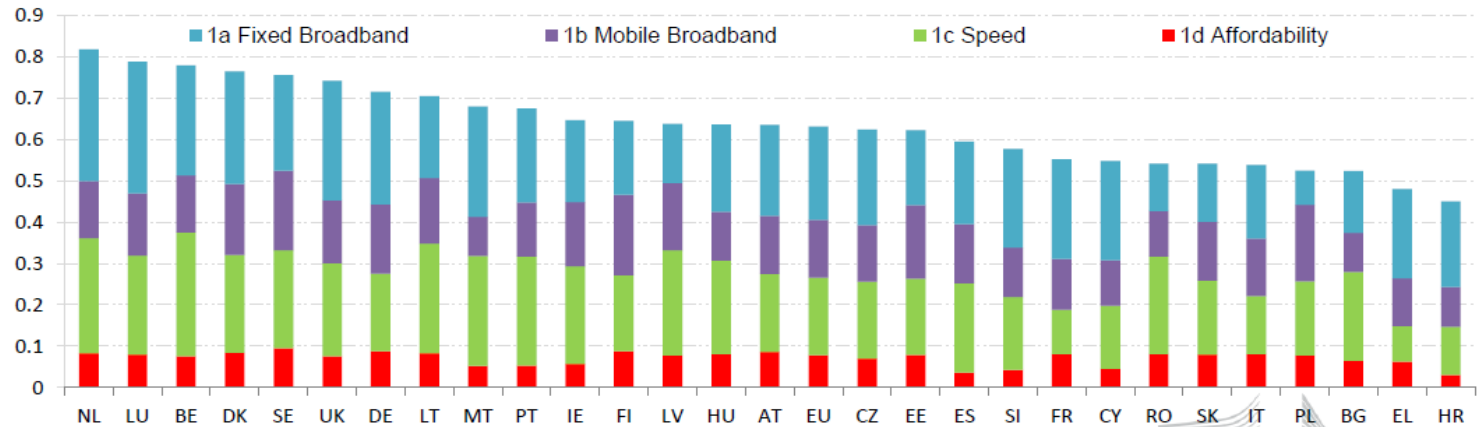
1. Incumbent – Croatia telecom (HT) -2008-2009 „Fiberland”
 - Around 200.000 HH covered with FTTH/B
 - GPON – two splitters level (second step is in the building)
 - Wholesale-physical access is not possible
2. EU fond(s) – Municipality & Operators
 - The national program envisages investments in two segments – agregation (backhaul) segment and access network
 - Aggregation part – 350 new node in white or brown field– total investment app. 100 mio Eur
 - Access network – covered 315.000 HH in white or brown field – total investment app. 124 mio Eur

RESULT=0

3. Ordinance on fiber optic distribution networks 2009-

Review

Digital Economy and Society Index (DESI) 2017, Connectivity



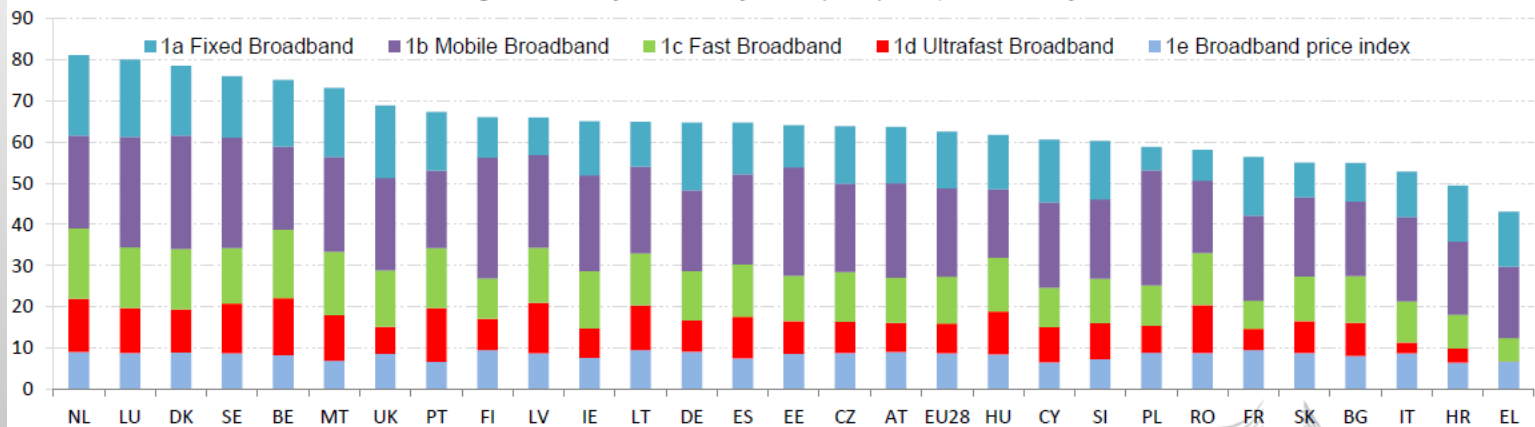
Europe's Digital Progress Report 2017 – Connectivity

3



European Commission

Digital Economy and Society Index (DESI) 2018, Connectivity



Source: DESI 2018, European Commission



European Commission

Number of household = 1,52 mio.

Coverage	HR-2016	HR-2017	EU-2017
Fixed broadband coverage (total)	97%	99%	97%
Fixed broadband coverage (rural)	89%	97%	92%
Fixed NGA coverage (total)	60%	67%	80%
Fixed NGA coverage (rural)	10%	16%	47%
Ultrafast coverage (total)	no data	34%	58%
4G coverage (average of operators)	67%	73%	91%

Source: Broadband Coverage Study (IHS and Point Topic). Data as of October 2016 and October 2017.

a. Fixed Markets

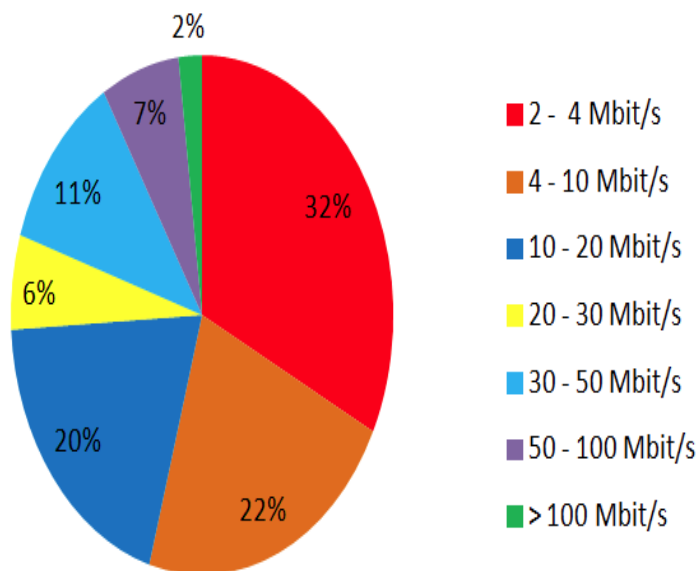
Fixed broadband market shares	HR-2016	HR-2017	EU-2017
Incumbent market share in fixed broadband	49.0%	47.6%	40.3%
Technology market shares			
DSL	80.3%	75.6%	64.2%
Cable	13.3%	13.9%	19.4%
FTTH/B	2.7%	4.1%	12.9%
Other	3.6%	6.3%	3.6%

Source: Communications Committee. Data as of July 2016 and July 2017.

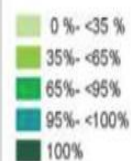
Figures

Number of household = 1,52 mio.

Households per access speed, Q12017



Croatia: NGA broadband coverage, 2016

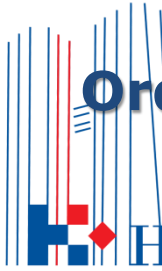


Source: Broadband Coverage in Europe 2016, a study by IHS Markit and Point Topic for the European Commission

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Households per access speed in Croatia (Source: HAKOM [7])

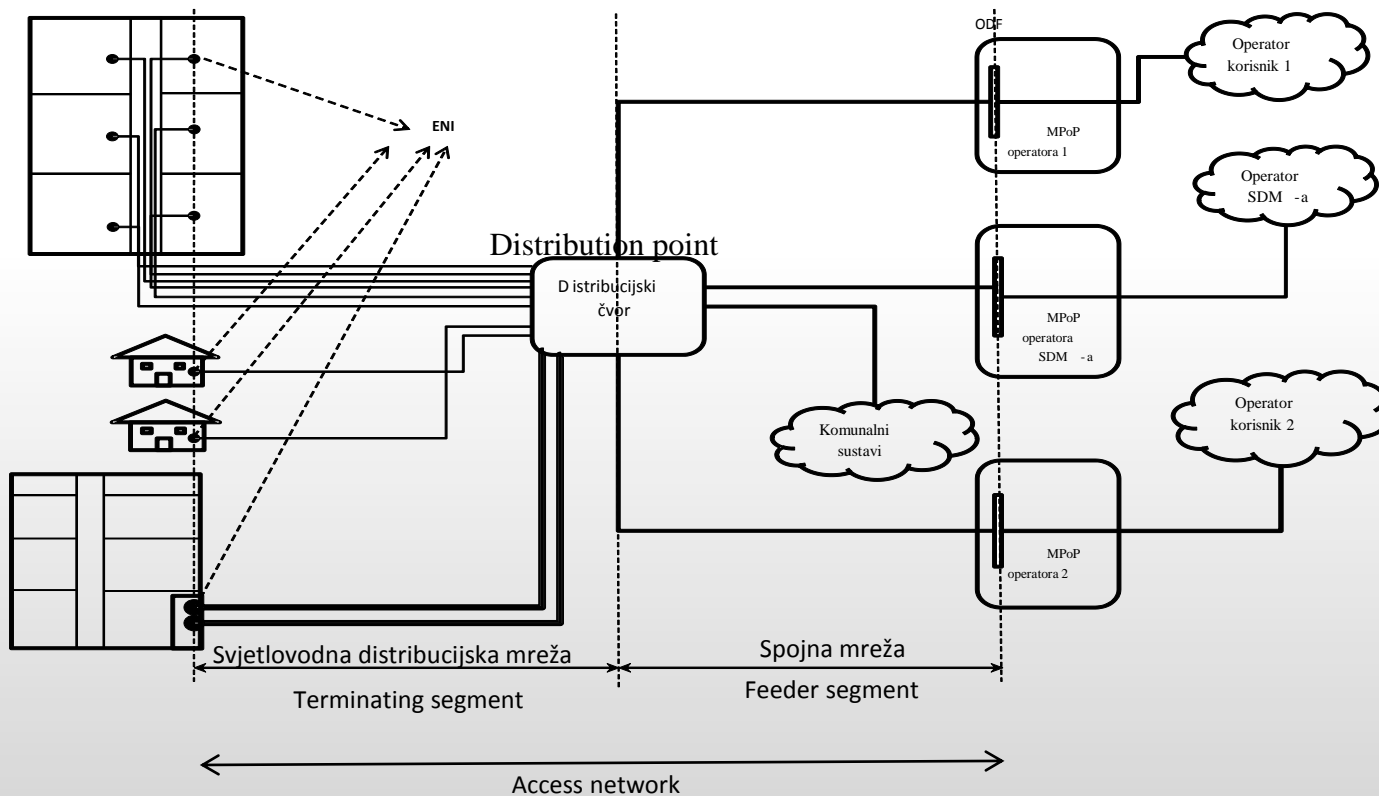
Overall NGA coverage in Croatia (as of end of June 2016) [8]



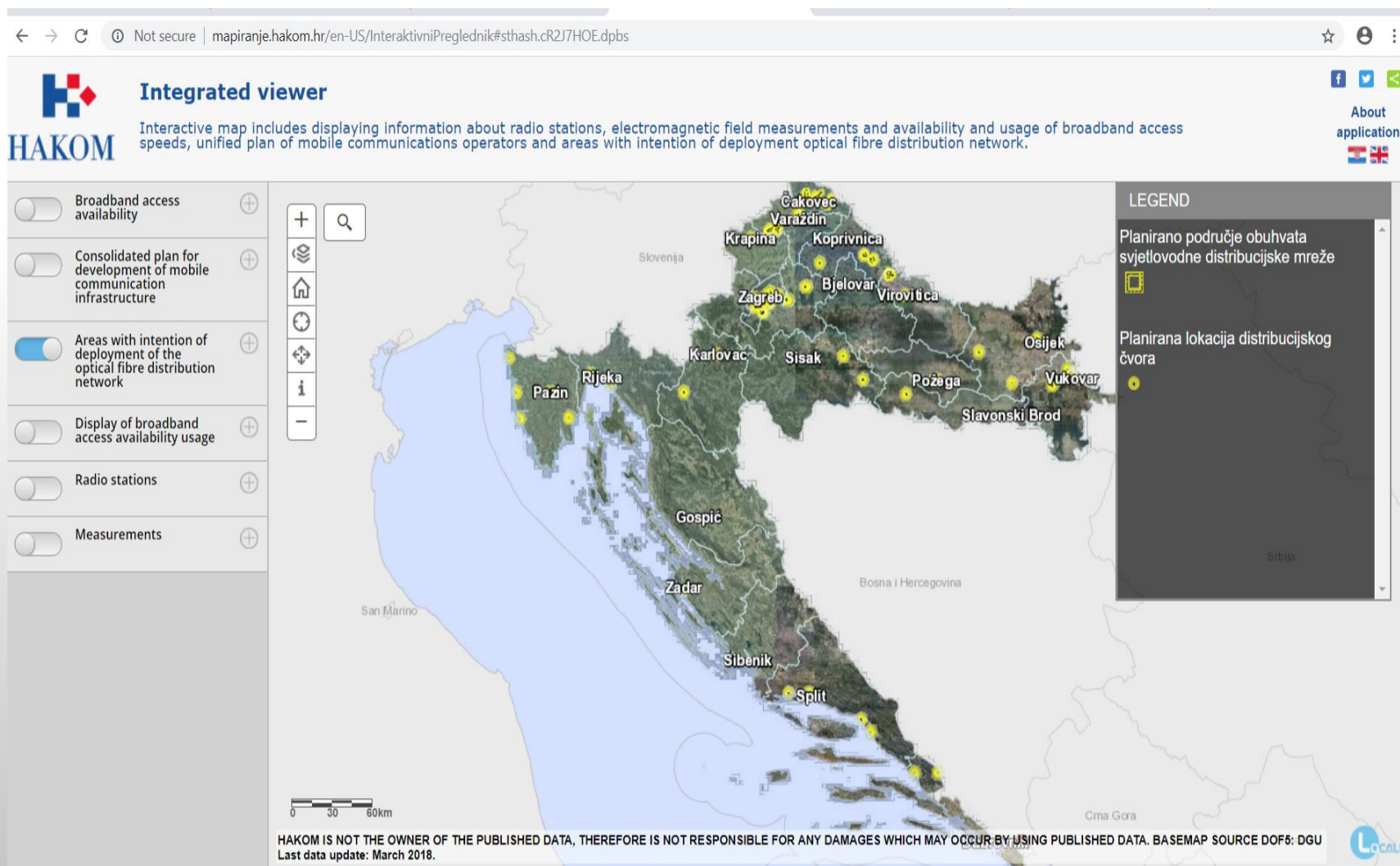
Ordinance on fiber optic distribution networks (2009, 2014)

1. Application: only in areas where household density is greater than 500 HH / km²
2. The rules apply only to the terminating segment of the access network
3. Defines the minimum capacity of distribution node (300 FO)
4. Defines 1,2 FO per household
5. The obligation to announce the construction
 - statement of interest for rent or co-investment

Ordinance on fiber optic distribution networks (2009, 2014)



Integrated viewer



Integrated viewer

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Publication of intent of deployment (construction) the optical distribution network

Interactive map includes display of data on intention of deployment the optical distribution network, which HAKOM publishes according to article 8, paragraph 4 of the Ordinance on optical fibre distribution networks (OG 57/14).

Pitomača

Investitor gradnje svjetlovodne distribucijske mreže na području Pitomača je PRO-PING Telekom, s adresom Trg kralja Tomislava 14, 33405 Pitomača i OIB-om 37524271023. Površina obuhvata planirane svjetlovodne distribucijske mreže je 10,2 kilometara kvadratnih. Broj postojećih i planiranih stanova, poslovnih prostora, javnih ili drugih objekata na tom području je 2635. Prema

KLOŠTAR PODRAVSKI
Kladare
Dirjevac
Pitomača
PITOMAČA
Starogr

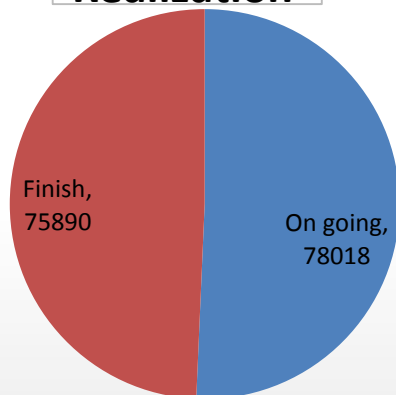
HAKOM IS NOT THE OWNER OF THE PUBLISHED DATA, THEREFORE IS NOT RESPONSIBLE FOR ANY DAMAGES WHICH MAY OCCUR BY USING PUBLISHED DATA. BASEMAP SOURCE DOF5: DGU
Last data update: March 2017.

1 Pitomača 2 Virje 3 Dubrava DC5 4 Dubrava DC6 5 Dubrava DC7 6 Kraljevečki Novaki DC1 7 Kraljevečki Novaki DC2 8 Križevci DC1 9 Dugo Selo DC1

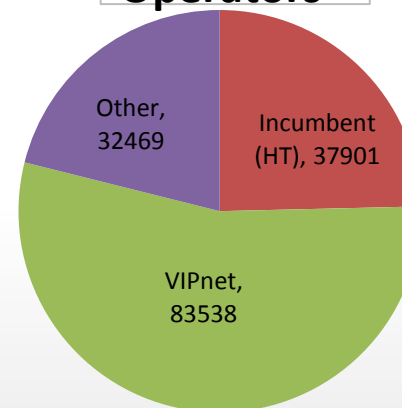
Windows taskbar: 14:24 11.9.2018. HRV

The results & realization

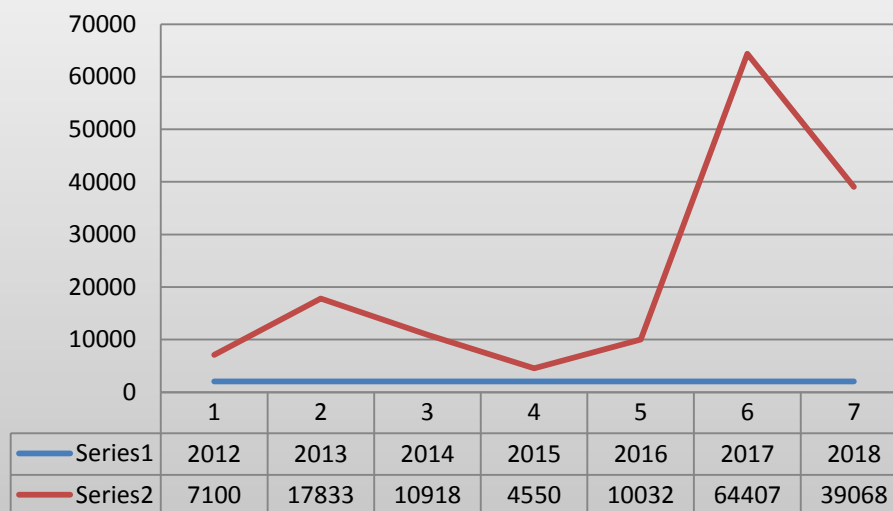
Realization



Operators



Announcement



Conclusion

1. Competition leads to faster growth of FTTH
2. The introduction of technical rules makes sense
 1. Encouraged deployment one network per area
 2. Measures to encourage co-investment
3. „Lesson learn“ – absorption of resources from EU funds



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