

# Broadband Mapping Systems in Europe and Regional Harmonization Initiatives

## Background Paper Presentation

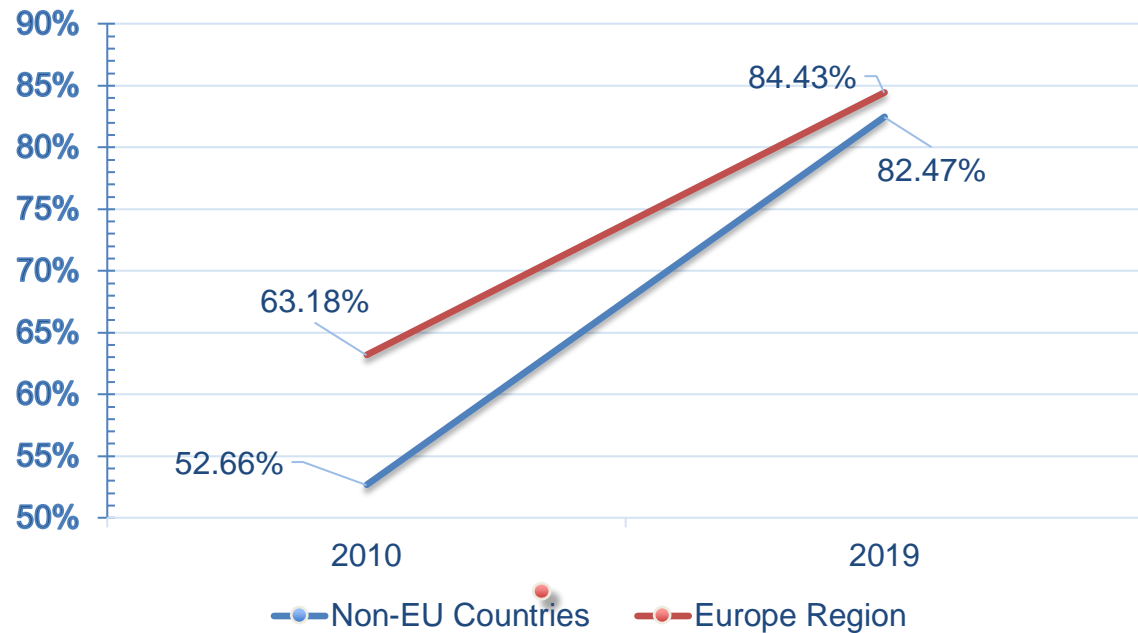
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*ITU Regional Regulatory Forum for Europe on Regulation Supporting Digital Transformation*  
*1<sup>st</sup> December 2020*

**Julian McNeill, ITU Consultant, ITU Office for Europe**

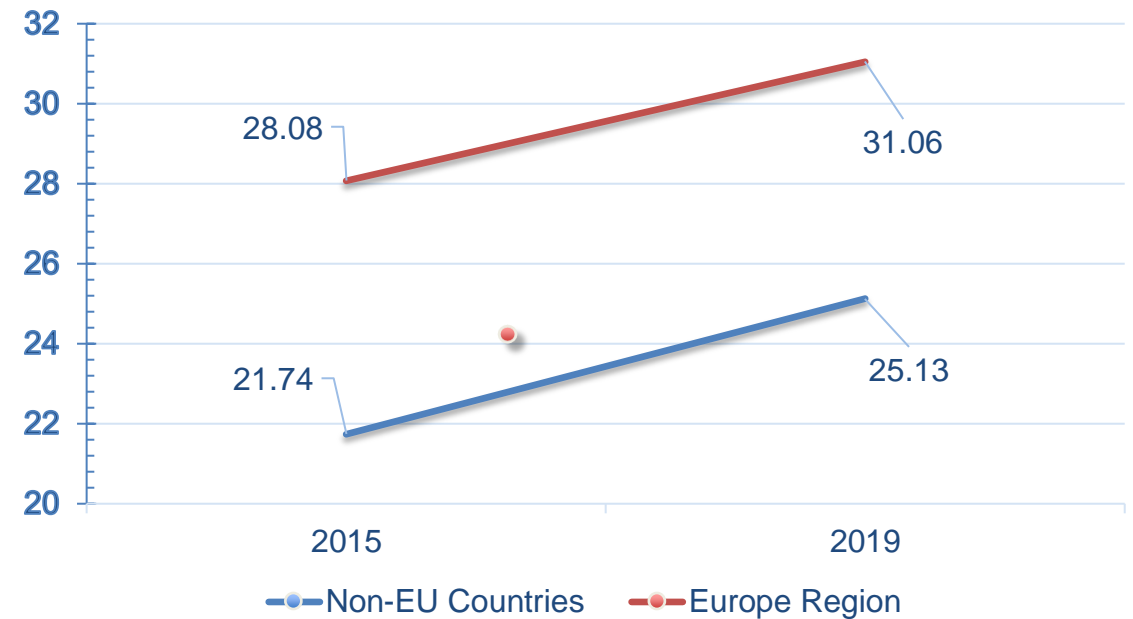
## Some data to begin with

### % of the Population with Internet Access in Europe Region



More than 50 million people from non-EU countries still not connected to the Internet in 2019

### Fixed Broadband Subscriptions per 100 inhabitants in Europe Region



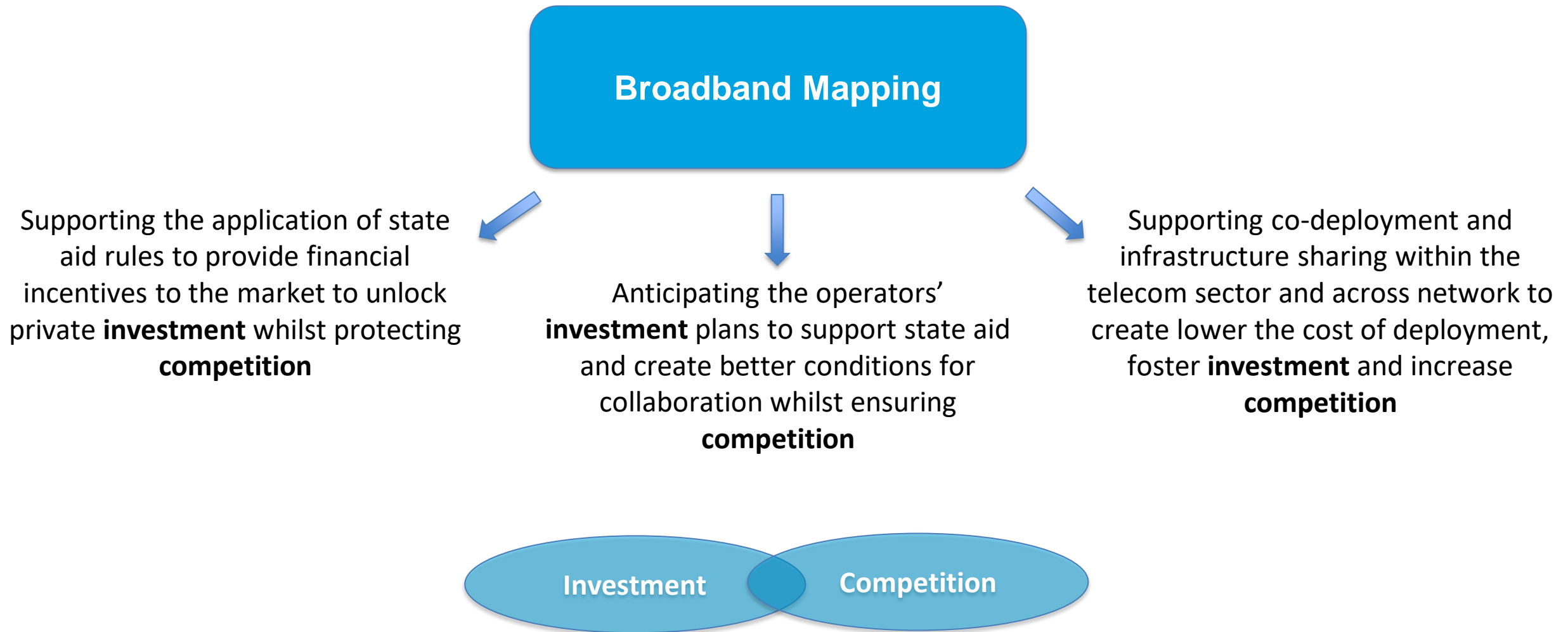
While mobile is driving broadband development, the gap on fixed broadband is not reducing

## Policy factors for Broadband development

- *Policymakers* from Europe region are caught up between societal demand for broadband and the necessity to support **underinvestment** whilst ensuring **competition** in the market.
- *Operators* are pressured between high costs of deployment and decreasing revenues.
- *Society* risks either not having appropriate service, or having to spend public resources inefficiently.

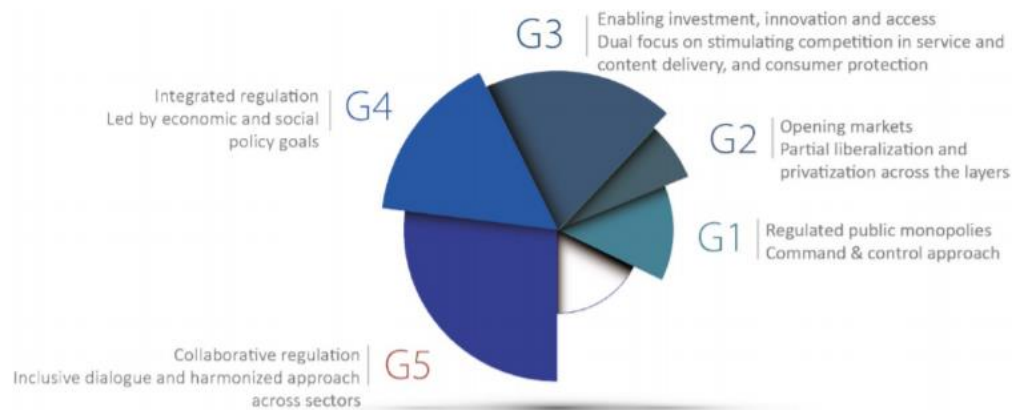


*any policy to address societal demands that is aimed at enhancing broadband networks requires careful evaluation to identify the right incentives to foster new investments in coverage and network upgrades. This is to be achieved by maintaining the conditions for markets to operate competitively and for operators to seize appropriate returns on investments (ROIs).*



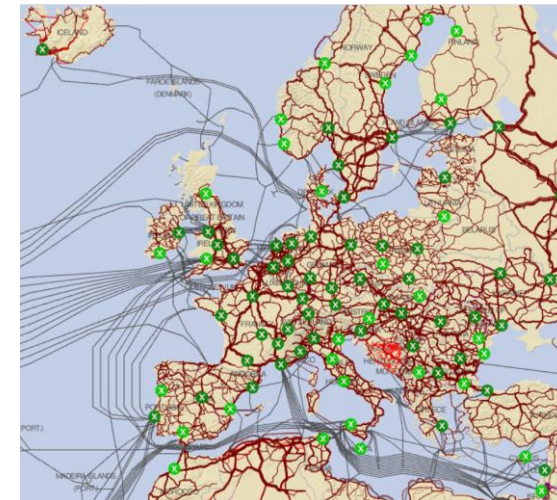
## Alignment with ITU activities

### G5 Benchmark on collaborative regulation



...recognizing **connectivity mapping** as a tool for evidence-based decision making

### ITU Interactive Transmission Maps project



...mapping **backbone networks** to measure resiliency of global networks

## Purpose of the paper

Provide a comprehensive overview of broadband mapping in Europe region (46 countries) and identify harmonization initiatives to allow fruitful exchange of information in the region by

- Outlining the development of the EU's regulatory framework for broadband mapping
- Address recent developments in the EU regulatory framework
- Provide a glimpse of European Commission and Member States actions in the context of implementing broadband mapping systems and related regulations
- Focus on the countries in South Eastern Europe having potential to make further progress in broadband development and strengthening broadband mapping having in mind developments at the EU level

# The European Union's Regulatory Framework

## The importance of strategy

<i><b>EU Strategy</b></i>	<i><b>Traces of Policy Development</b></i>
Digital Agenda for Europe (2010)	<i>Explicitly recognized that mapping of available passive infrastructure is an important factor in order to lower the cost of broadband deployment</i>
Gigabit Society Strategy (2016)	<i>Expanded on DAE 2010 stating that regulation supporting investment in connectivity is most effective when based on in-depth local knowledge through mapping of electronic communication networks and of operators' investment plans</i>

**Takeaway:** regulatory developments in field of broadband mapping in the European Union emerged from a strategic policy driver



## Key Regulation

### EU Guidelines on State Aid for Broadband (2013)

- Art. 3.4 (a) requiring Member States to carry out a “**detailed mapping and analysis of coverage**” for any intended state aid measure
- Art. 3.4 (f) requiring to foster **re-use of existing infrastructure**
- Art. 2.4 (29) The recognition that “**centralised inventory of the existing infrastructure** [including non-telco infrastructure] **also planned works could help the roll-out of commercial broadband**”

### Broadband Cost Reduction Directive (2014)

- Art. 4 mandates that electronic communication networks have the “*right to access, upon request, [...] minimum information concerning the existing physical infrastructure of any network operator*: and this should be provided by a **single information point (SIP)**
- Art. 6 then sets the possibility to **require** “*information concerning on-going or planned civil works related to its physical infrastructure for which a permit has been granted:*” for any network operator

### European Electronic Communications Code (2018)

- Art. 20 **empowers National Regulatory Authorities** to request information necessary to the enforcement of the Code
- Art. 22 requires that “*National regulatory [...] shall conduct a geographical survey of the reach of electronic communications networks [...] by 21 December 2023.*”
- Moreover, the “*survey may also include a forecast*” on planned investments and BEREC will produce **Guidelines** on this matter by 21 June 2020.

## Recent Regulatory Developments

### EU Guidelines on State Aid for Broadband (2020-2021)

- The Commission is looking into revising the Guidelines to ensure these are fit for purpose
- The revision will draw upon several studies conducted in the past 2 years as well as a **consultation open until 5 January 2021**
- Among relevant recommendations from the past, better alignment with the BCRD and the EECC is envisaged, **eventually by integrating all mapping into one system**

Expected Q2/Q3 2021

Under revision

### Broadband Cost Reduction Directive (2020-2021)

- The BCRD has been characterized by difficult implementation, mainly due to institutional design and too broad reach
- The Commission will revise the BCRD to provide more clarity and ensure the objectives of the Directive are met more efficiently
- Recommendations include **mandatory management of the SIP by NRAs and integration of service mapping into one system**

Expected Q4 2021

### BEREC Guidelines on service and investment mapping (2020-2023)

- .In March 2020 BEREC released Guidelines on conducting geographical surveys of electronic communications, as mandated by art. 22 of the EECC.
- The Guidelines are a first attempt to ensure better harmonization by standardizing definitions and technical information on service mapping and provide guidance on investment mapping
- Member states are required to comply by December 2023

Under implementation

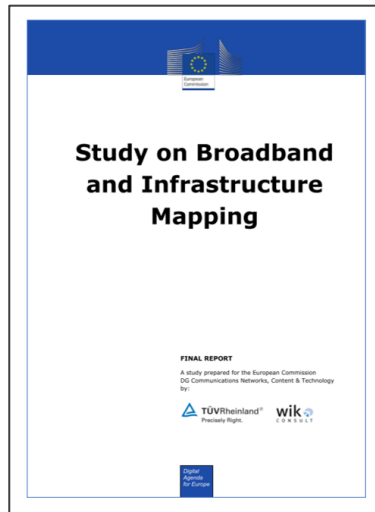
# Broadband Mapping Systems in the EU

## The European Commission

### Study on Broadband and Infrastructure Mapping (2014)

Developments:

- Implementation of the BEREC Guidelines and Revision of EU regulations
- Substantial experiences from Member States in implementation in this area



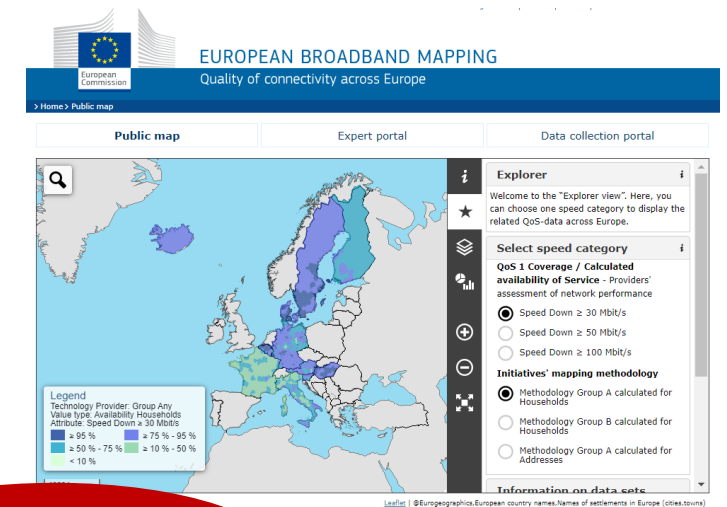
Revision?

### Mapping of Fixed and Mobile Broadband Services in Europe (2016)

Developments:

- Phase 1 completed
- Phase 2 underway

Great harmonization effort which has been feeding into the process of drafting of the BEREC Guidelines



Same model for the BCRD?

## A few considerations looking at Member States

- Although implementation of the BRCD has carried some challenges, it has had a relevant impact on establishing a data driven culture and fostering collaboration.
- The application of EU Guidelines on state aid have enabled member states to allocate resources efficiently. The EECC and the BEREC Guidelines will further support in the process.
- Beyond infrastructure and service mapping, investment mapping remains still a grey area characterized by regulatory uncertainty. Greater integration between the three layers is emerging as a potential way forward, as can be traced in the revision process underway.

Broadband Mapping Systems in 46 Countries of Europe Region

Head of Organisation	Head Position	Primary email (Head of Organisation)	Primary email (Organisation/ITU focal point)	Mapping System in Place	Type	Collects Backbone Data?
Mr. Peter Altmaier	Federal Minister for Economic Affairs	beero-vit4@bmiwi.bund.de	stefano.zedler@bmiwi.bund.de	Broadband Atlas	Infrastructure/Service Mapping	No
Mr. Nikolaos Pappas	Minister	nc@mindigital.gr	agrt@mindigital.gr; s.perpiti	Geographical System	Infrastructure/Service Mapping	N/A
Mr. Nikolaos Pappas	Minister	nc@mindigital.gr	agrt@mindigital.gr; s.perpiti	Hyperionnet	Speed testing	N/A
N/A	N/A	N/A	N/A	Superfast Internet Program Q	N/A	N/A
Dr. Monika Kuraz	President	N/A	renata.oresko@tiscali.net; ze	Szeleszav	Speed testing	No
Mr. Hrafakell V. Gíslason	Director General	hrafakell@pfs.is	hrk@pfs.is	N/A	N/A	No
Mr. Denis Nsoeghen	Minister	N/A	mark.griffith@dccse.gov.ie; rc	High Speed Broadband	Infrastructure/Service Mapping	No, but checking if they can
Mr. Ayoub Kara	Minister	N/A	vizaam@mcc.gov.il	N/A	N/A	N/A
Prof. Angelo Marcello H.E. Stefano Pattaeselli	Chairman	segreteria.generale@agcom.it	segreteria.zedfai@agcom.it	Agcom Broadband Map	Infrastructure/Service Mapping	Yes, checking if they can disclose
H.E. Stefano Pattaeselli	Minister	N/A	eva.spina@misce.gov.it	Sinpi Portal	Investment/Infrastructure Share	N/A
H.E. Stefano Pattaeselli	Minister	N/A	eva.spina@misce.gov.it	Virtual Internet	Speed testing	No
Ms. Vito Stelmakere	Chairman of the Board	N/A	juris.rendis@vses.hr	N/A	N/A	N/A
Dip. Eng. Kurt Dikler	Director	kurt.dikler@ttn.lt	lita@ttn.lt	LTKV	Infrastructure/Service Mapping	N/A
Mr. Fülkősz Dobrovolszki	Director	fulkasz.dobrovolszki@rtt.it	lga.nikolic@rtt.it	Matavimaj	Speed testing (Roads and Rail)	No
Mr. Fülkősz Dobrovolszki	Director	fulkasz.dobrovolszki@rtt.it	lga.nikolic@rtt.it	Mataviz	Speed testing	No
Mr. Fülkősz Dobrovolszki	Director	fulkasz.dobrovolszki@rtt.it	lga.nikolic@rtt.it	geoportallu	Infrastructure/Service Mapping	N/A
Mr. Luc Tapella	Director	luc.tapella@tir.lu	secretariat@tir.lu	map.geoportallu	Infrastructure/Service Mapping	N/A
Mr. Luc Tapella	Director	luc.tapella@tir.lu	secretariat@tir.lu	Chelkmynet	Speed testing	N/A
Dr Edward Woods	Chairman of the Board	N/A	ivan.m.begovic@mcc.gov.me	N/A	N/A	N/A
Mr. Octavian Pău	Director	N/A	mariana.brascovec@sercet.md	N/A	N/A	No, but planning to collect and to coop
Mr. Christophe Pierre	Head of Organisation	cpierre@gouv.mc	cpierre@gouv.mc	N/A	N/A	No, but checking if they can
Mr. Braško Korićević	President of the Council	N/A	darko.grgarovic@chip.me	Nettest FKIP	Speed testing	No
Mr. Braško Korićević	President of the Council	N/A	darko.grgarovic@chip.me	FKIP not publicly available	Infrastructure/Service Mapping	No, but checking if they can
Mr. Martin Štepić	Chairman	secretariat.bestwar@com.hr	secretariat.bestwar@com.hr	Broadband Atlas	Infrastructure/Service Mapping	N/A
Mr. Susho Dimitrijević	Director	is-coopost@minicak.si	is-coopost@minicak.si	Atlas	Infrastructure/Service Mapping	N/A
Ms. Elizabeta Srbe Ararther	Director General	firmapost@nikom.no	biljana.gunlovic@sec.mk	Geoportall (not publicly avail)	Infrastructure/Service Mapping	Yes, checking if they can disclose in Oct
Ms. Elizabeta Srbe Ararther	Director General	firmapost@nikom.no	firmapost@nikom.no; stlg.col	NetStart.no	Speed testing	No
Mr. Joo Ant6nio Cadete de M.	Chair of ANACOM's Board	N/A	josé.barros@sacom.pt; cris	PIT (Single Information)	Service Mapping	Yes
Mr. Joo Ant6nio Cadete de M.	Chair of ANACOM's Board	N/A	josé.barros@sacom.pt; cris	Broadband search eng	Service Mapping	Yes
Mr. Sorin Mihai Grindeanu	President	N/A	voichita.valces@sacom.org.r	Sistema de Informaço	Infrastructure/Service Mapping	No
Mr. Sorin Mihai Grindeanu	President	N/A	voichita.valces@sacom.org.r	Netmade	Speed testing	No
Engineer Michele Giri	Responsabile	michela.giri@ps.sm	voichita.valces@sacom.org.r	Netograf	Speed testing	No
Dr. Vlado Tator	Director	vlatko.tator@ratel.rs	michela.giri@ps.sm	Estensione Territoriale	Infrastructure/Service Mapping	N/A
Dr. Vlado Tator	Director	vlatko.tator@ratel.rs	slkosandra.ristic@ratel.rs	FAVEL NetTest	Speed testing	No
Eng. Vlodimir Kezjir	Chairman	secretary@teleoff.gov.sk	vlatko.tator@ratel.rs	EU Line publicly available	Infrastructure/Service Mapping	No, but checking if they can
Eng. Vlodimir Kezjir	Chairman	secretary@teleoff.gov.sk	jan.flik@teleoff.gov.sk	EU Mobil Test	Speed testing	No
Ms. Taja Mula	Director	tsajm.mula@skor-rs.si	jan.flik@teleoff.gov.sk	Not publicly available	Infrastructure/Service Mapping	No
Ms. Taja Mula	Director	tsajm.mula@skor-rs.si	marjan.trdin@skor-rs.si	Geoportall AKOS	Infrastructure/Service Mapping	N/A
Mr. Francisco Polo	Secretario de Estado	N/A	marjan.trdin@skor-rs.si	AKOS Test Net	Speed testing	No
Mr. Dan Sjöbom	Director General	N/A	bgonzalez@minieco.es	Mapa de Cobertura de	Infrastructure/Service Mapping	No, but checking if they can
Mr. Philipp Metzger	Director	philipp.metzger@bakom.svm	dirk-olivier.von-der-embden@	Broadband atlas	Infrastructure/Service Mapping	No, but checking with other DEW
Mr. Ömer Abdullah Karagözöl	Minister	omer.karagozogl@btk.gov.tr	dirk-olivier.von-der-embden@	tu-foolapoint@pts.se	Infrastructure/Service Mapping	No, but shared contact from Swisscom
Mr. Alexander Zhivotovskiy	Minister	uzreco@interconnection	uzreco@interconnection	Broadband atlas	Speed testing	No
Mr. Christopher Woolford	Director or Interconnection	chris.woolford@ofcom.org.uk	chris.woolford@ofcom.org.uk	nabok@thedigital.gov.ua	Infrastructure/Service Mapping	N/A
Mr. Christopher Woolford	Director or Interconnection	chris.woolford@ofcom.org.uk	wesley.milton@ofcom.org.uk	UK Broadband Covera	Infrastructure/Service Mapping	N/A
Mr. Fernando Vázquez Alzola	Secrétaire général	segreteria.general@ecv.es	segreteria.general@ecv.es	Mobile and Broadband	Service Mapping	N/A

# Broadband Mapping Systems in South Eastern Europe



Albania



Bosnia and Herzegovina



Georgia



Moldova



Montenegro



North Macedonia



Serbia



Ukraine

- On average, 15% lower broadband penetration than Europe region average and 5 fewer bb subscriptions per 100 in habitants.
- Working with the European Union on several projects relating to broadband development
- To various degrees and with different objectives, all countries are working on broadband mapping

## Key considerations on the eight countries

1. Countries have given precedence to infrastructure mapping rather than service mapping so there is scope to expand to service mapping to support better allocation of public funding and ensure **competition**
2. Within the context of infrastructure mapping, measures looking to mirror the BCRD often do not also include other network industries such as utilities, which would greatly support cost reduction and therefore **investment**
3. Considering that countries find themselves at a relatively early stage for development in this field, there is scope for developing an integrated solution which would cover all three layers (infrastructure, service and investment) and support greater **investment** as well as more efficient use of public funding and protection of market **competition**



## Final considerations

- The EU regulatory framework is under revision so all stakeholders in the region should participate in this process which may bring substantial updates in the course of 2021.
- Non-EU countries in South Eastern Europe have the potential to leapfrog towards systems integrating three layers of mapping (infrastructure, service, investment) in support of broadband development over the next decade.
- Overall, as in any other policy area, cross-border collaboration and exchange of information are key to ensure a dialogue between regulators and make sure best practices are shared and contribute to harmonize approaches in the region.



- Thank you -