

# 5G strategies, policies and implementation in Europe

## *Setting the regional context*

*Mr. Jaroslaw Ponder, Head of ITU Office for Europe  
International Telecommunication Union*



EUROPE

# REGIONAL INITIATIVES

BUENOS AIRES ACTION PLAN

**2018-2021**

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### BDT Thematic Priorities

- Network infrastructure & management  
- Policy and regulation

- Digital Services

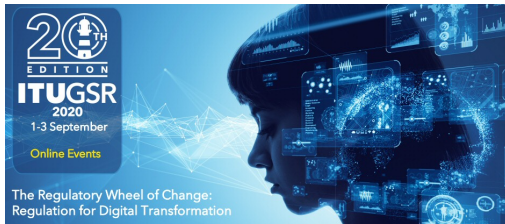
- Capacity building and skills development  
- Digital inclusion

- Cybersecurity

- Digital ecosystem

### Regional Initiatives

- **EUR1:** Broadband infrastructure, broadcasting and spectrum management
- **EUR2:** A citizen-centric approach to building services for national administrations
- **EUR3:** Accessibility, affordability and skills development for all to ensure digital inclusion and sustainable development
- **EUR4:** Enhancing trust and confidence in the use of information and communication technologies
- **EUR5:** Information and communication technology-centric innovation ecosystems



STUDY GROUP 1	STUDY GROUP 2
<p>Enabling environment for the development of telecommunications/ICTs</p> <ul style="list-style-type: none"> <li>▶ At a glance</li> <li>▶ Documents</li> </ul>	<p>ICT services and applications for the promotion of sustainable development</p> <ul style="list-style-type: none"> <li>▶ At a glance</li> <li>▶ Documents</li> </ul>
<p>ONGOING WORK</p> <ul style="list-style-type: none"> <li>▶ <a href="#">Click here to see the recent work completed.</a></li> </ul>	<p>FINAL REPORTS</p> <ul style="list-style-type: none"> <li>▶ Study Group 1</li> <li>▶ Study Group 2</li> </ul>

**20th Edition ITUGSR ONLINE 2020**  
**Global Symposium for Regulators (GSR) 2020**  
**Best Practice Guidelines**  
*The gold standard for digital regulation*

**Mrs Doreen Bogdan-Martin**  
 Director, Telecommunication Development Bureau (BDT), International Telecommunication Union

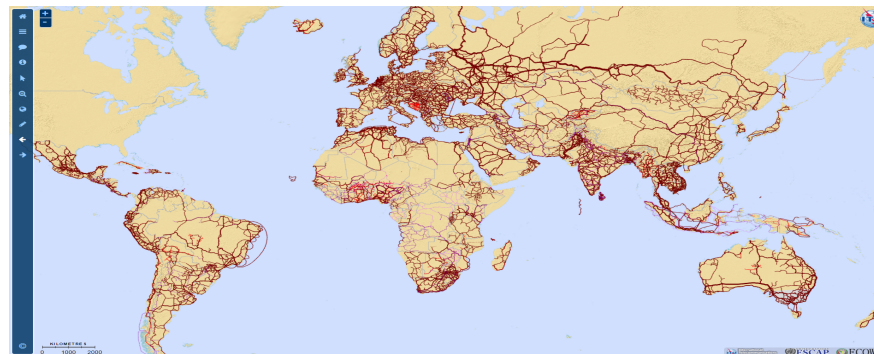
Over the past 20 years, GSR has led us through the evolution from telecom to ICT to digital regulation and provided a forum to help our industry to develop and respond to major world crises like the 2008 financial crash and COVID-19, along with national challenges and adversity of all kinds.

The GSR-20 Best Practice Guidelines build on the collective wisdom of the previous editions to shed light on digital transformation and help regulators and policy-makers chart the course through the uncharted territory ahead of us, and to respond to the unprecedented disruption caused by COVID-19. The Guidelines lay down the key features of regulatory regimes for ICT markets to remain 'switched on' in the digital transformation, accelerate market take-up, and deliver more access to more people, more quickly.

**Mr Dan Sjöblom**  
 Director-General Swedish Post and Telecom Authority (PTS), Chair of BEREC and GSR 20 Chair

As the pace of digital transformation accelerates, developing an effective regulatory approach is more vital than ever. In the face of new global emergencies, governments and regulators need to consider holistic, cross-sectoral, and, to the extent possible, multi-national regulatory and policy approaches.

The GSR-20 Best Practice Guidelines cast a framework for progressive regulatory patterns and policy while charting the way ahead for industry and regulators. The Guidelines offer a big-picture, strategic perspective while identifying concrete steps towards enabling regulators to pursue regulatory reform towards achieving thriving, inclusive digital markets.



EUROPE - REGIONAL INITIATIVE 1

**Objective:** To facilitate high-speed connectivity with resilient and synergistic infrastructure development, deployment and sharing, whilst ensuring a trusted and quality user experience.

Regional initiative

1

Broadband infrastructure, broadcasting  
and spectrum management

## EUR1: Broadband infrastructure, broadcasting and spectrum management

- Regional Development Forum
  - 28 May 2020, online
- ITU Webinar on Towards Strengthened Impact of ICTs on Economic Development in Europe
  - 15 June 2020, online
- ITU Seminar for Europe and CIS on Spectrum Management and Broadcasting
  - 1-2 July 2020, online
- ITU Regional Forum for Europe: 5G Strategies, Policies and Implementation
  - 22-23 October 2020, o
- ITU Regional Regulatory Forum for Europe on “Regulation Supporting the Digital Transformation”
  - Forthcoming 30 November – 1 December 2020, online
- Supporting Investment Opportunity Mapping Systems in Broadband Infrastructure for South Eastern Europe – Signing Ceremony
  - 7 May 2020, online
- Assistance on Spectrum and Frequency Planning
  - Moldova
  - Albania (ongoing)
- Regional Studies
  - Background document: 5G country profiles in non-EU countries *(new)*
  - Background document: Implementing 5G for Good: does EMF matter? *(new)*
- Projects to be launched
  - Supporting Investment Opportunity Mapping Systems in Broadband Infrastructure for South Eastern Europe *(to be launched soon)*

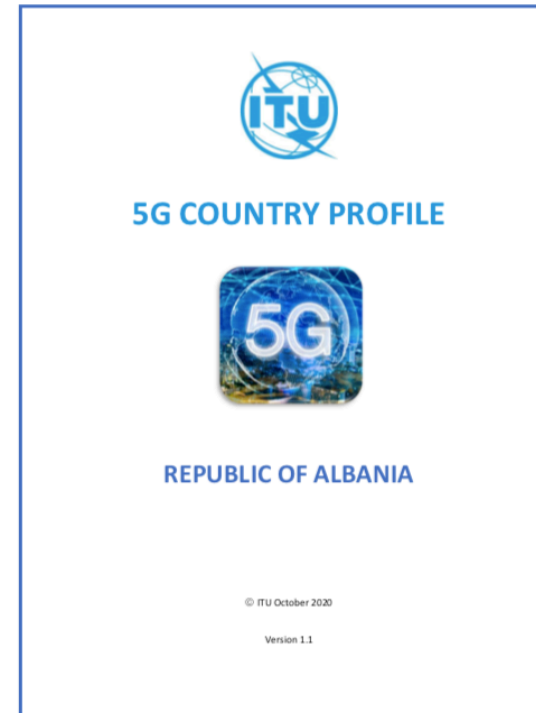
# **5G country profiles in non-EU countries**

# Introduction

- As part of the Regional Initiative for Europe 1 on “broadband infrastructure, broadcasting and spectrum management”, the ITU Office for Europe has developed a series of 5G country profiles in non-EU countries providing a clearer picture on the status of 5G implementation in non-EU countries of Europe region.

## Each country profile covers the following:

1. ICT background and current status of broadband
2. Broadband and mobile telecommunication sectors data
3. Current progress on 5G: consultations and national strategies
4. Spectrum assignment for 5G & market development
5. Electromagnetic field levels and the implementation dynamics
6. 5G commercial launches: announcements, trail cities, and digital cross-border corridors



### 1. ICT background and current status of broadband

The development of broadband in Albania has been a government priority for years, largely aligned with the integration perspective of the European Union. In 2003, the Albanian government underlined the need to introduce and develop the ICT sector to achieve higher economic growth through the National ICT Policy Strategy.<sup>1</sup> Several policies and programs have been in place ever since, and notable improvements have been achieved in terms of access, infrastructure, and affordability. Nowadays, the broadband market is one of the most vibrant markets in the telecommunications sector in Albania.<sup>2</sup> Despite the recent ICT developments in the country, rural connectivity remains a challenge, where costs can be high and penetration low.<sup>3</sup> In the 2017 ITU ICT Development Index (IDI), Albania ranks 89<sup>th</sup> out of 176 countries.<sup>4</sup>

Albania saw significant developments as a result of its first National Broadband Plan (NBP) from 2013, which provides a set of directions and goals to be undertaken by the government, public agencies, and other regulatory agencies for the 2013-2020 period. The NBP for the 2013-2020 period was focused on: I) Improving and further developing broadband infrastructure throughout the country; II) Increasing Internet penetration; III) Providing Internet with high speed and reliability at local, regional and national level, including rural and remote areas; IV) Increasing competition and lowering the prices; V) Improving quality of service; VI) Expanding the number of electronic services (e-services) available to Albanian citizens and digitalization of all public services; and VII) Raising the awareness of the society, including people with special needs, regarding the benefits arising from the use of broadband services.

In June 2020, the Albanian government approved and adopted the National Plan for Sustainable Development of Digital Infrastructure, Broadband 2020-2026.<sup>5</sup> The new National Broadband Targets (“NBTs”) of Albania constitute the following:<sup>6</sup>

- By the end of 2025, to have broadband penetration of 100% of households, businesses and public institutions with:
  - ✓ 50% having high-speed access of at least 1 Gbps (urban areas – Tirana);
  - ✓ 50% having access at the speed of at least 100 Mbps;
- By the end of 2025, to have 100% of households in rural and remote areas connected with broadband access of at least 100 Mbps;
- By the end of 2025, to have 100% of schools connected with high-speed broadband connectivity of 1 Gbps and access in every classroom;
- By the end of 2025, to have 100% of universities connected with high-speed broadband connectivity of 1 Gbps;

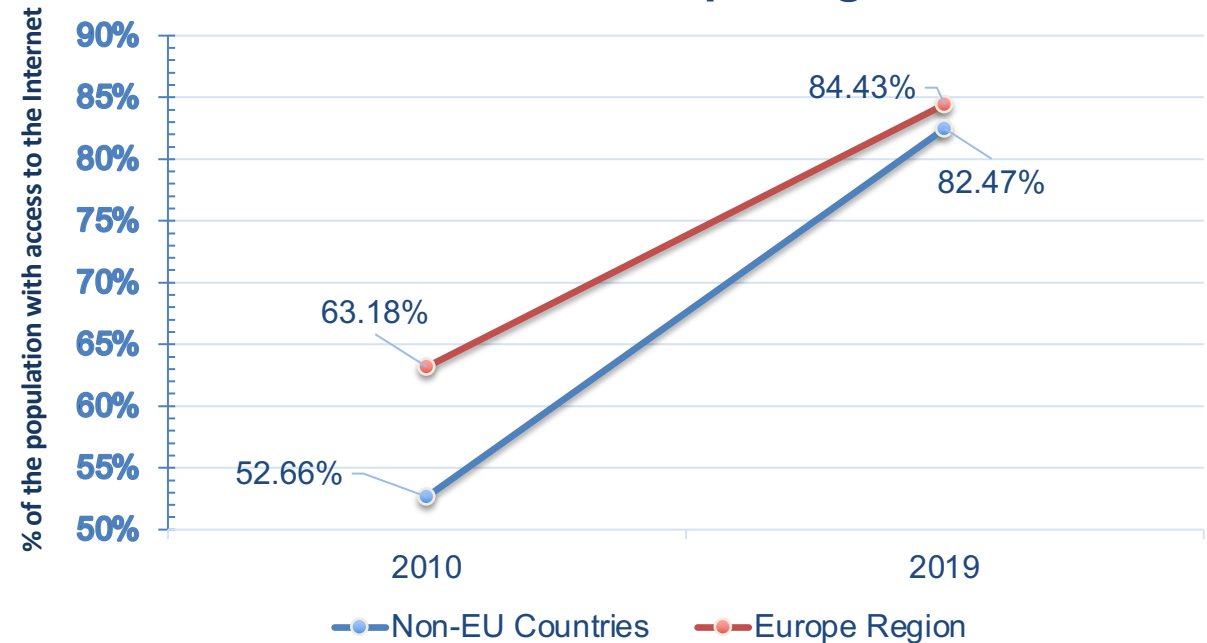
<sup>1</sup> See [https://www.itu.int/ITU-D/ict/publications/2013/10/tech/B1301\\_01\\_strategy\\_albania.pdf](https://www.itu.int/ITU-D/ict/publications/2013/10/tech/B1301_01_strategy_albania.pdf)  
<sup>2</sup> See ITU, 2020, Policy Paper Update: National Broadband Plan 2020-2023 for Albania: A review of the 2013 vision, objectives and targets.  
<sup>3</sup> See [https://www.itu.int/ITU-D/ict/publications/2017/05/1702017\\_Vol002.pdf](https://www.itu.int/ITU-D/ict/publications/2017/05/1702017_Vol002.pdf)  
<sup>4</sup> See [https://www.itu.int/ITU-D/ict/publications/2017/05/1702017\\_Vol002.pdf](https://www.itu.int/ITU-D/ict/publications/2017/05/1702017_Vol002.pdf)  
<sup>5</sup> See <http://www.infratibera.gov.al/wp-content/uploads/2020/07/National-Plan-Broadband-2026.pdf>  
<sup>6</sup> Both of Albania's national broadband plans were developed with the support of the ITU under the Regional Initiative for Europe. See more: ITU, 2020, Policy Paper Update: National Broadband Plan 2020-2023 for Albania: A review of the 2013 vision, objectives and targets



# ICT background and current status of broadband

- The data indicating that the group of non-EU countries has substantially reduced the gap with the Europe region over the past 10 years.
- The data testifies a vibrant ICT ecosystem that is underpinning countries' digital transformation.
- However, despite 78 million people have been included in using the internet since 2000, still around 33 million people remain unconnected across these 18 countries.
  - This signs the great potential for further development, especially in countries characterized by a young population.

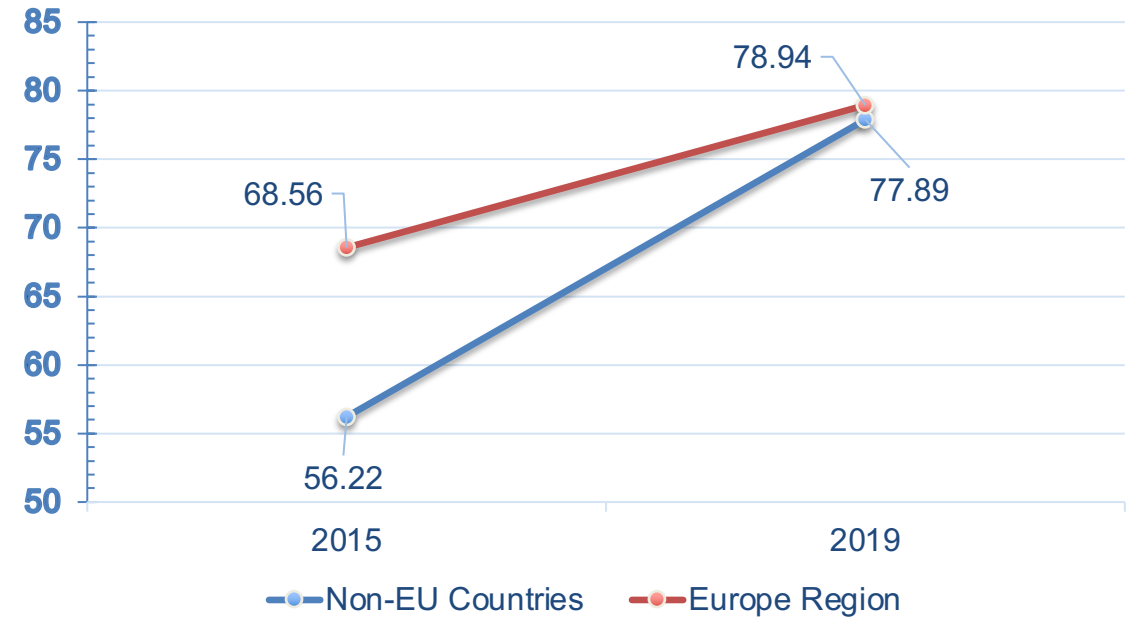
**% of the Population with Internet Access in Europe Region**



Elaborated based on data available in the ITU World Telecommunication/ICT Indicators Database online (2020):  
<http://handle.itu.int/11.1002/pub/81550f97-en>

- Focusing on broadband data from the past 5 years, since 2015 both fixed and mobile subscriptions per 100 inhabitants have been steadily growing at rates beyond 7% on a yearly basis.
- The shrinking gap illustrates the importance that mobile broadband is gaining in these countries.
- Moreover, a 10-fold increase in domestic mobile broadband traffic within countries since 2010, estimated at 6 exabytes in 2019, and growing at an average of 44.64% over the past two years, completes the positive picture for mobile broadband.

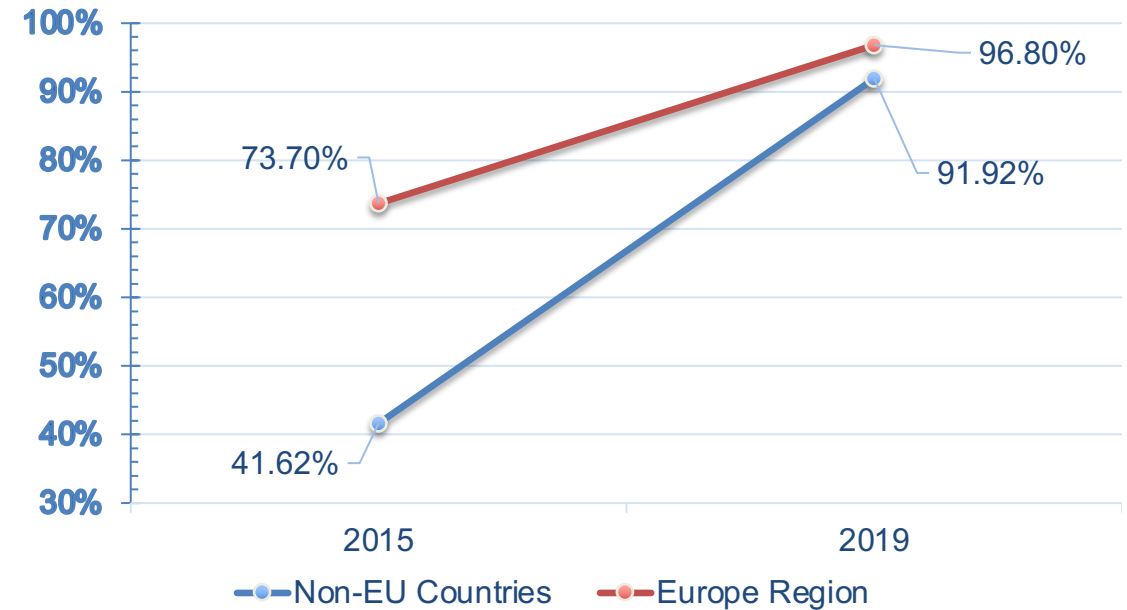
### Mobile Broadband Subscriptions per 100 inhabitants in Europe Region



Elaborated based on data available in the ITU World Telecommunication/ICT Indicators Database online (2020): <http://handle.itu.int/11.1002/pub/81550f97-en>

- The growth of 4G/LTE coverage in non-EU countries have enabled additional 57 million people to enjoy fast-speed mobile connectivity over the past 5 years, showing how a large gap has been consistently reduced.
- Given that cost is a fundamental component of mobile broadband uptake, the average mobile-data basket cost for the non-EU countries averaged 0.9% of the GNI per capita in 2018 for a minimum monthly allowance of 1.5 Gb, while the Europe region's average was 0.8% for the same year.
  - It must be noted that this data has 1.5 Gb allowance as a minimum common denominator, with operators often offering higher packages.

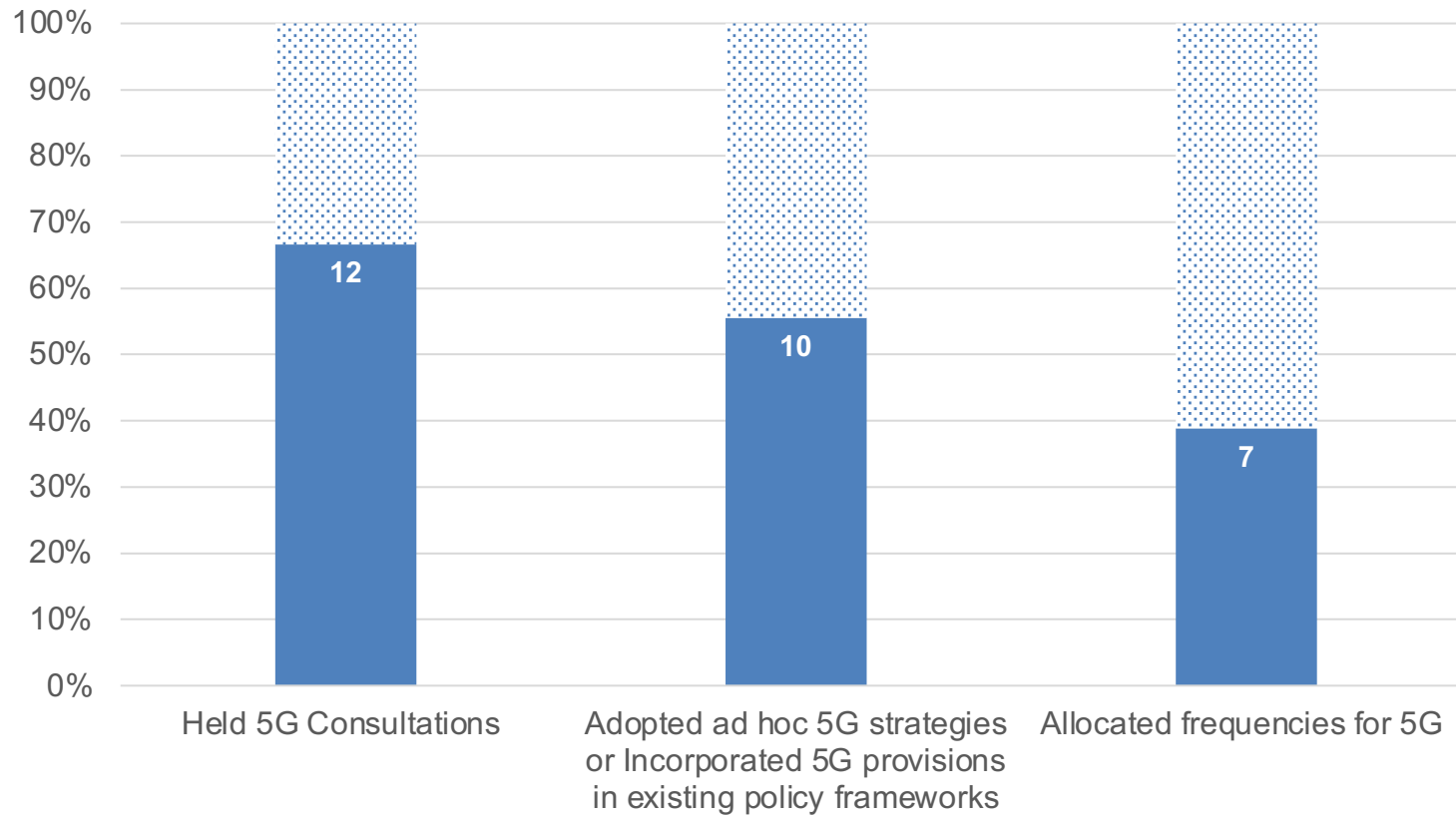
### % of the population with 4G/LTE coverage in Europe Region



Elaborated based on data available in the ITU World Telecommunication/ICT Indicators Database online (2020):  
<http://handle.itu.int/11.1002/pub/81550f97-en>

# 5G Consultations and National Strategies

- As of October 2020



## Snapshot of 5G dynamics in non-EU countries

	Albania	Bosnia and Herzegovina	North Macedonia	Montenegro	Serbia	Georgia	Moldova	Turkey	Ukraine	Israel	Iceland	Liechtenstein	Monaco	Norway	San Marino	Switzerland	United Kingdom	Vatican
Held 5G Consultations	✓		✓	✓	✓	✓	✓	✓			✓	✓		✓		✓	✓	
Adopted <i>ad hoc</i> 5G strategies or Incorporated 5G provisions in existing policy frameworks	✓		✓	✓	✓	✓		✓	✓		✓			✓			✓	
Allocated frequencies for 5G			✓ (2020)							✓	✓		✓	✓		✓	✓	

## A snapshot of the Western Balkans

### North Macedonia:

*the country has freed the 700 MHz band and will proceed to auctioning of 5G by the end of 2020*

### Serbia:

*the country has made both digital dividends free and will proceed to auctioning in Q1 2021. This has been shifted from the original plan of Q3-4 2020 due to Covid-19*

### Albania:

*there are no specific 5G regulations and strategies in place as the government is focused on freeing DD2 at the moment. New developments by the end of 2020 will enlight on future auctioning*

### Montenegro:

*EKIP is set to launch a 5G roadmap with national strategies and goals by the end of 2020. This will provide more information on next auctioning due in 2021.*

### Bosnia & Herzegovina:

*The country is currently accelerating full implementation of 4G and taking necessary steps to reduce the investment cycle. 5G tests are being carried out in the country.*

# Spectrum Assignment for 5G & Market Development

- In all countries, spectrum for 5G has been identified following WRC 2019 outcomes and CEPT decisions.
  - International and regional organisations are playing a significant role in providing guidance on spectrum harmonization and continue acting as a reference points for the international community and private sector stakeholders.
- With regards to the specific bands identified for 5G it is important to highlight that the 3.6GHz band is being allocated for 5G (or in some cases for general IMT following the technology neutrality principle) across almost the totality of countries.
  - This is undertaken either through licensing or through temporary testing licenses providing operators with the chance to make tests and develop their services.
- In countries where 5G auctions have not yet taken place, the 26GHz and the 700MHz bands are usually held back in terms of testing due to the risk of interference.
  - In fact, one of the challenges most commonly encountered in the implementation of 5G is the process of freeing up the DD2 and re-purposing spectrum from broadcasting services to IMT services, a process well underway within the EU and that it is facing delays in many countries.
  - Covid-19 has, in most cases, delayed by a period of 6 months planned spectrum auctions.

# Electromagnetic Fields Levels and the Implementation Dynamics

- Concerning the EMF fields limits, **EMF still remains a challenge** most countries take two lines of approach with some transposing ICNIRP and IEEE recommendations in law whereas other prefer posing more restrictive limits in the order of 10-100 times lower levels than recommended.
- This often results in a double negative outcome of increasing cost of deployment (due to more antennas needed) and therefore increasing the concerns of the public.
- Countries have responded in different manners, with notable examples of Ofcom, RATEL and the former Ministry of Digital Affairs of Poland taking substantial steps to address the issues

List of non-EU countries with more restrictive Limits or additional protective policies than ICNIRP recommendations

Ukraine
Switzerland
Serbia
Montenegro*
Turkey
Monaco
Liechtenstein
Israel



# Does EMF Matter?

- The ITU has been preparing a background paper on “Implementing 5G for Good: does EMF matter?”
- The paper seeks to provide policymakers with a point of reference on the status of scientific evidence and recommendations on the topic.
- Prepared in coordination of all three sectors we invite stakeholders to provide input and comments on how this paper can be further developed and used in supporting the countries on these matters.



# 5G commercial launches, announcements, trials

In all 18 countries 5G trials are being undertaken by operators

- Two examples of ecosystem development

digital -liechtenstein.li



- 5G techritory ad Nordic cooperation



**3rd-annual Baltic Sea Region 5G ecosystem forum**

Virtual event | November 11-12, 2020

**- Thank You -**