ITU Regional Initiative for EUROPE

ITU-UKE Workshop on Mapping of Terrestrial Broadband Infrastructure and Services
2-3 July 2019 / Warsaw, Poland

Jaroslaw PONDER
Head of the ITU Office for Europe
EURregion@itu.int | @ITU_EUR

www.itu.int/en/ITU-D/Regional-Presence/EUROPE
EUROPE REGION

46 Countries

51% of the world population is online
(Measuring the Information Society Report #ITUdata)

80% of the population in Europe online by the end of 2018
(Measuring the Information Society Report #ITUdata)

#ICT4SDG
SUSTAINABLE DEVELOPMENT GOALS
2025
Regional Initiatives for Europe

- Broadband infrastructure, broadcasting and spectrum management
- A citizen-centric approach to building services for national administrations
- Accessibility, affordability and skills development for all to ensure digital inclusion and sustainable development
- Enhancing trust and confidence in the use of information and communication technologies
- ICT-centric innovation ecosystems
Implementation Framework

World Telecommunication Development Conference (WTDC-17)
Buenos Aires, Argentina, 9-20 October 2017

REGионаl іntіатіvеs
Implementing Buenos Aires Action Plan

Implementation Period
2018-2021
EUROPE PRIORITIES 2018-2021

ICT Infrastructure
Digitization e-Services
Digital Inclusion
Cybersecurity
Innovation

#ICT4SDG
SUSTAINABLE DEVELOPMENT GOALS
To facilitate high-speed connectivity with resilient and synergistic infrastructure development, deployment and sharing, whilst ensuring a trusted and quality user experience.
**EUR1: Broadband infrastructure, broadcasting and spectrum management**

**Expected results:** Assistance to the countries in need in the following

- Development of plans (national and regional) and feasibility studies for deployment of ubiquitous resilient high-speed connectivity, including 5G/IMT2020 and digital broadcasting deployment, with all relevant components including legislation, standards, organizational set-up, capacity building and cooperation mechanisms, as needed.
- Sharing of guidelines on collaborative regulation between the telecommunication sector and other synergistic sectors such as energy, railway and transportation.
- Assessment of dynamics, challenges and opportunities in respect of the roll-out of diverse broadband technologies across Europe in the context of the creation of ubiquitous resilient high-speed broadband infrastructure.
- Sharing of best practices and case studies in cable TV, digital broadcasting, 5G experience, early use cases and trends in next-generation access network roll-out.
- Mapping of the ubiquitous infrastructure and services, fostering harmonization of approaches across the region and taking into account infrastructure-sharing approaches applied by countries.
- Establishment of quality-of-service systems and consumer protection frameworks.
- Development of plans for ICT for sustainable energy covering different types of ICT applications and innovations.
• A series of seminars and workshops built the capacity of more than 1 100 stakeholders in the field of spectrum management and transition to digital broadcasting. This includes the following meetings:

  • Workshop on **The Future of Cable TV**, Geneva, Switzerland (25-26 January 2018)
  • Regional Seminar for Europe and CIS on **Digital Future Powered by 4G/5G**, Kiev, Ukraine (14-16 May 2018)
  • Regional Workshop for Europe and CIS on “**Broadband Development based on 4G and 5G Technologies**”, Almaty, Republic of Kazakhstan (17-18 September 2018)
  • Baltic Sea Region 5G Ecosystem Forum "**5G Technology**", Riga, Latvia (27-28 September 2018)
  • Regional Regulatory Forum for Europe on "**Evolving Regulatory Frameworks for Digital Future**", Budva, Montenegro (1-2 October 2018)
  • Forum on “**Towards 5G Enabled Gigabit Society**”, Athens, Greece (11-12 October 2018)
  • 3rd Annual CIS and CEE Spectrum Management Conference and ITU Workshop “**How to achieve interference free communication at the current technological stage**”, Minsk, Belarus (08/04/2019 - 11/04/2019)
Additional 5G related meetings

• ITU-T Workshop on “5G, Health and EMF”
  5 December 2017, Warsaw, Poland

• Contribution to Europe’s 5G Ambition: Investing in 5G Enabler Infrastructure, 20 June 2018, European Parliament, Brussels)

• 2nd Annual CIS and Central and South-Eastern European Spectrum Management Conference and ITU Regional Workshop “Broadband Development based on 4G and 5G Technologies”
  17-20 September 2018, Almaty, Kazakhstan

• Conference on EMF and 5G, Warsaw, 6-7 December 2019
The following publications were made available in 2018:

- ICT for Sustainable Energy (2018)
- Workshop reports (2018 and 2019)

Technical Assistance

- Albania: Update of the Broadband Policy
- North Macedonia: Special Paper on ICT Infrastructure Development

The Europe region part of the ITU Broadband Map was updated by reflecting the networks of several European operators.

A twinning programme between Hungary and Albania led to an exchange of best practices in the field of spectrum management, in addition to development of the new spectrum strategy and policy in Albania.

The above mentioned activities have been supplemented by a series of trainings delivered by the Europe region network of ITU centres of excellence that built capacity of more than 600 participants in field of broadband, Internet governance, cybersecurity and next generation networks.
MAPPING of INFRASTRUCTURE

- National Mapping Systems in 46 countries of Europe Region
- Diverse level of development
  - Active
  - Partially active
  - Under construction
  - Unknown
- Technical country assistance by relevant stakeholders
- Possible project targeting group of non-EU countries
Global Broadband Map: Broadband Transmission Capacity Indicators

1: Transmission network length (Route kilometres)
2: Node locations
3: Equipment type of terrestrial transmission network
4: Network capacity (bit rate)
5: Number of optical fibres within the cable
6: Operational status of the transmission network
7a: Percentage of population within reach of transmission networks
7b: Percentage of area within reach of transmission networks
The objective of the Validation Process is to engage network operators and administrations to verify the accuracy and integrity of the data, whilst it remains protected behind TIES.

As the lines are verified, their status will progress from either RED, AMBER or GREEN through to light blue for PUBLIC (After final clearance).

For a detailed description: https://www.itu.int/itu-d/tnd-map/validation/
### Global Broadband Map: Data Structure – Sample

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>TYPE-INF</th>
<th>STATUS</th>
<th>CAPACITY</th>
<th>FIBRES</th>
<th>VALIDITY</th>
<th>NOTES</th>
<th>DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>93.50</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>49.45</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>75.38</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>168.88</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>158.91</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>171.91</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>142.00</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>123.47</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>87.78</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>34.32</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>133.62</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>246.96</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>69.41</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>315.05</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>161.57</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>164.29</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>57.41</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>228.04</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>94.67</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>76.51</td>
</tr>
<tr>
<td>Canada</td>
<td>Fibre Operational</td>
<td>Operational</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
<td>82.14</td>
</tr>
</tbody>
</table>
MAPPING of INFRASTRUCTURE

• Europe in Global Broadband Map

STATUS OF DATA PER COUNTRY
LETTER OF ENGAGEMENT
DATA TRANSFER TO GLOBAL MAP

#ICT4SDG
SUSTAINABLE DEVELOPMENT GOALS

World Summit on the Information Society
Turning targets into action

Lebanon 2005 | Tunis 2005 | Nairobi 2009

UNESCO
ITU
ITU-R
ITU-T
Next Steps

• Towards mapping / investment opportunities maps for non-EU countries of Europe region
  • Stocktaking of the mapping tools
  • Gap analysis
  • Harmonization of approaches of non-EU countries
  • Consultations at the ITU Regional Regulatory Forum for Europe, 30 September – 1 October
  • Technical assistance to the countries

• Invitation to the European countries to provide information to the Global Terrestrial Transmission Map
Thank You!!!

EURregion@itu.int