

Mapping mobile's global coverage

Myths, realities, and why high-resolution insights matter for progress



Jakub Zagdanski
GSMA Intelligence, Senior Economist

The success story of near-universal mobile network coverage is real and contained in the waves of network generations...



94% global population coverage
Achieved in just over a decade since its launch



54% global population coverage
Achieved in 5 years since its launch



38% of global land area covered
Often beyond the reach of grid electricity

...but with right data we can track network availability, and confront the reality of what drives rollout patterns



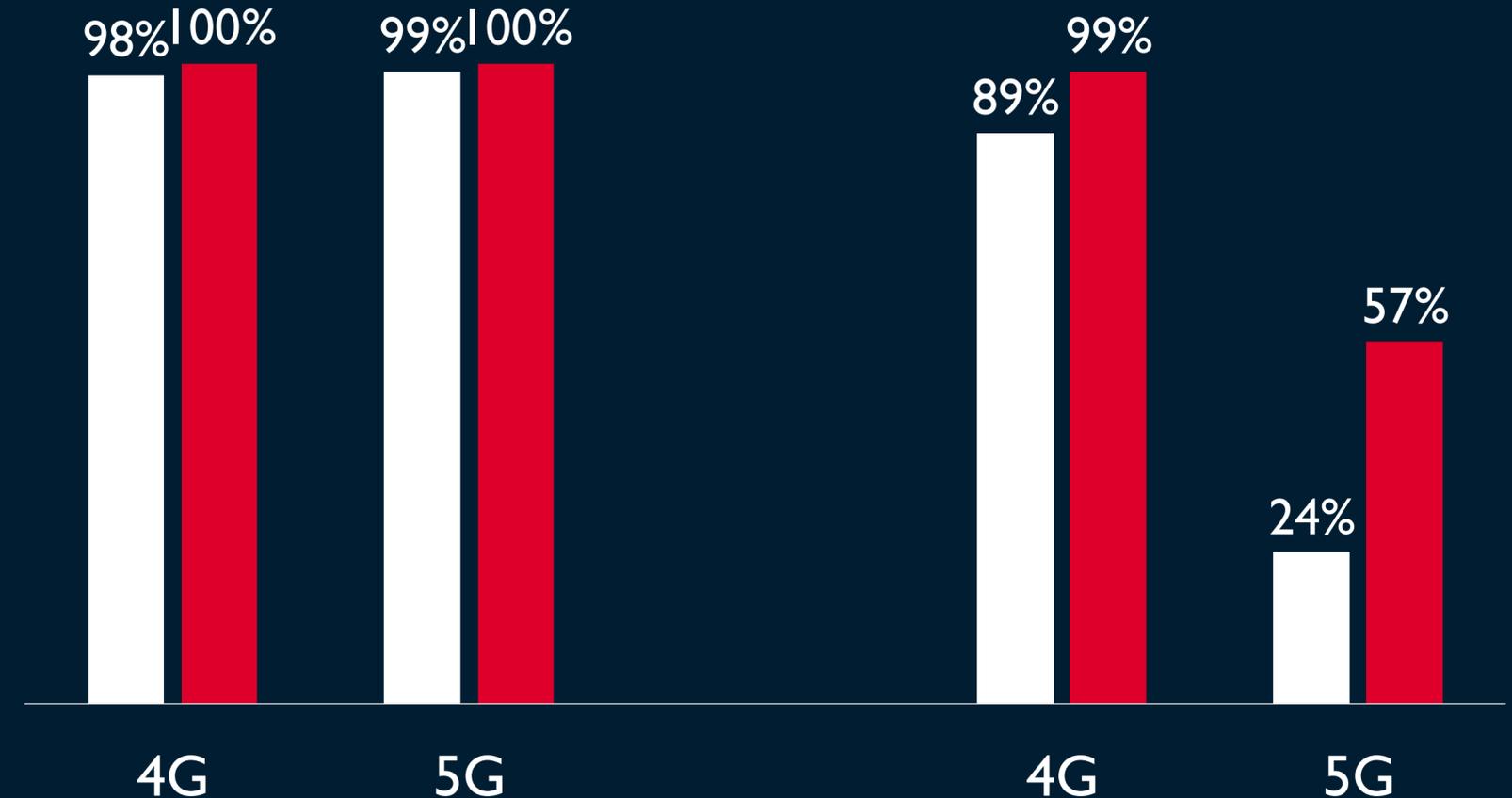
Local commercial viability of network deployment is the reality check for consumers, industries, and policymakers

Mobile network population coverage

■ Rural ■ Urban

High-income
(selected countries)

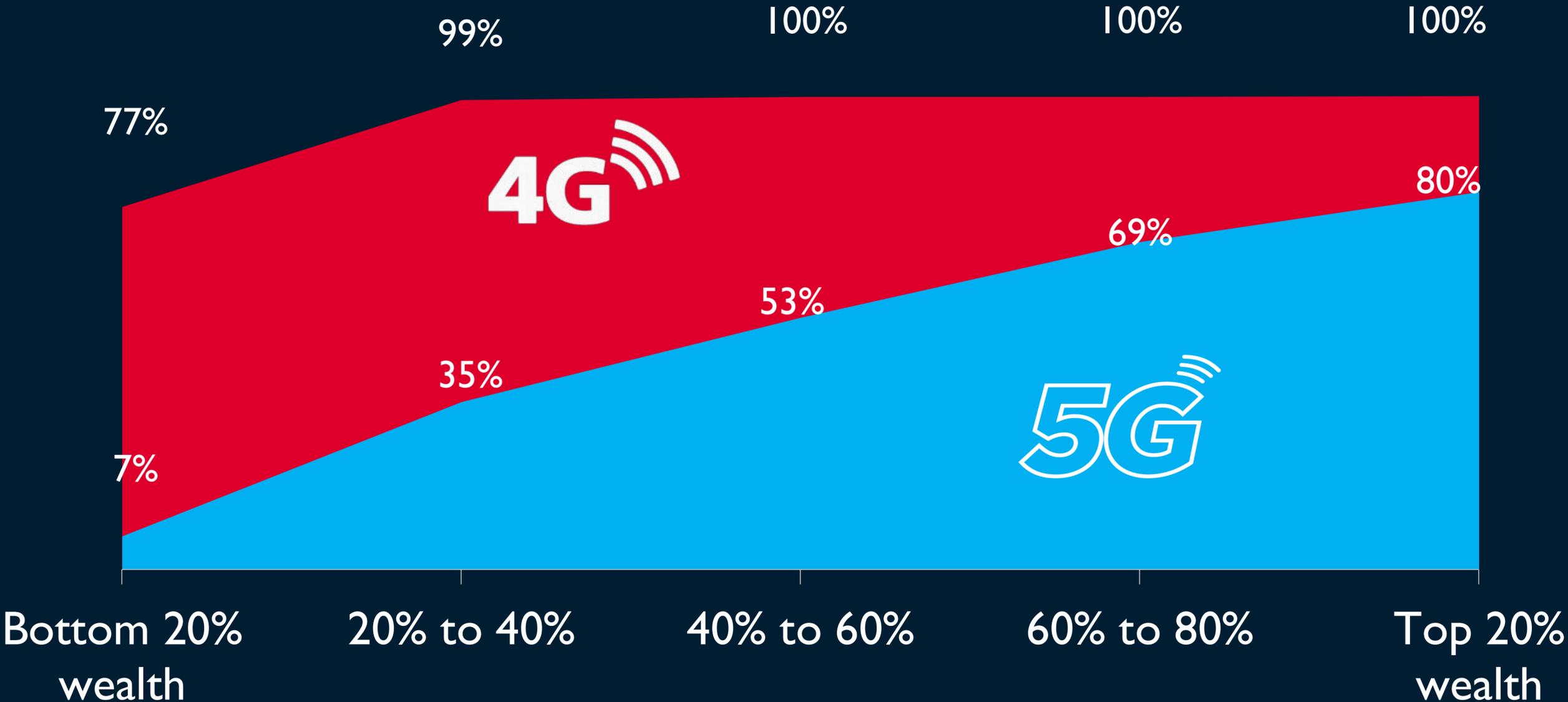
Low- and middle-income
(selected countries)



Source: GSMA Intelligence analysis of Mobile Coverage Explorer

Tracking dark spots provides more answers

Brazil's population coverage by wealth quintile



Source: GSMA Intelligence analysis of Mobile Coverage Explorer and Meta Relative Wealth Index

As we drill down data, we can focus on 5G network availability in specific places

		Bulgaria	Malaysia
Residential population	 Urban	99%	97%
	 Rural	93%	42%
Roads	 Main	95%	65%
	 All	85%	59%
	 All	80%	14%



The path to connecting the remaining populations and places: how close are we?

With granular data, even closer!

- Better targeting of mobile infrastructure and internet services – fewer risks, better returns on investment

Satellite provides the capability to fill in the gaps, but commercial case varies

- Will affordability remain a challenge for satellite services and satellite-capable devices?





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Eutelsat Group, EVP International Affairs

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(CSI) Unit



MAPPING MOBILE'S GLOBAL COVERAGE: POLICY PERSPECTIVE

4 March 2026

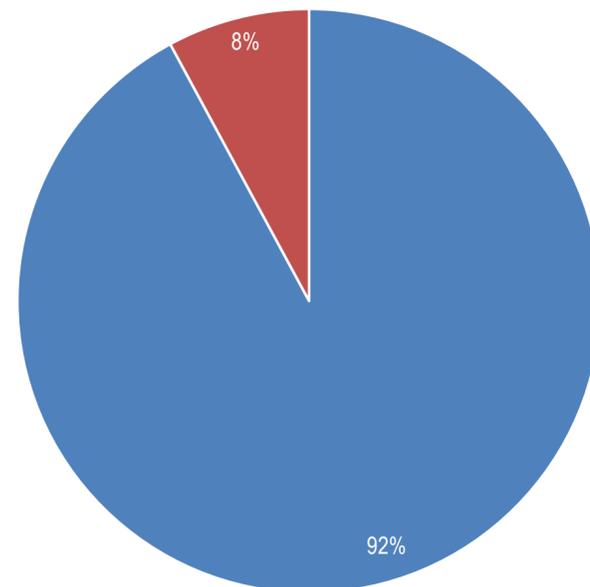
Alexia González Fanfalone, PhD
Head of the Connectivity Services and Infrastructures Unit
OECD



Which OECD member Countries have mapping initiatives?

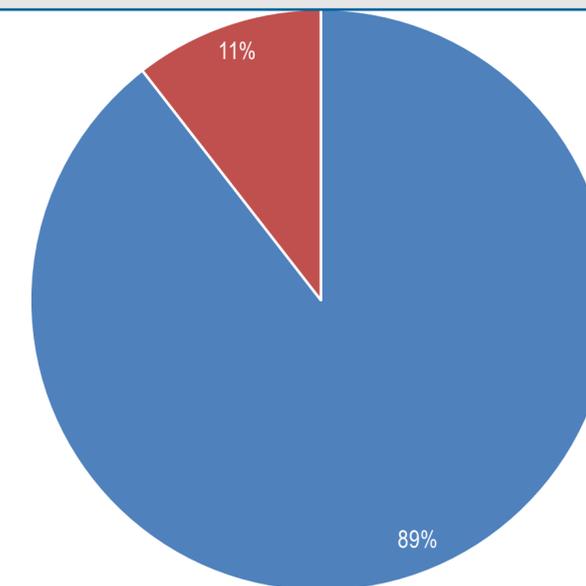
Almost all OECD have granular (subnational) indicators on broadband & the vast majority have broadband maps

Granular measurement of broadband coverage, subscriptions and quality at subnational level?



■ Yes ■ No

Government/regulatory-endorsed broadband mapping of ISP coverage?



■ Yes ■ No

Plus: almost three quarters of OECD countries *(71% or 27 countries) use approaches such as “crowd-sourcing” and open data to measure the quality and coverage of broadband.

Source: CSI regulatory questionnaire 2025



Broadband mapping for policy makers

The three pillars of data driven regulation



Mapping mobile broadband coverage can serve multiple purposes for policy makers



A decision-making tool

- Understand subnational situation to implement policies
- Prioritise funding for deployments
- Understand spatial connectivity divides within the countries



A pure regulatory tool

- Set coverage and/or performance targets
- Report on deployment evolution of coverage obligations for new technologies (i.e. 5G)
- Evaluate market competition



A user empowerment tool

- Inform on the three pillars of data driven regulation
- Have an official, neutral information source
- Choose provider based on tailored needs
- Publish broadband performances with a standard testing protocol



What are the **main challenges** in broadband mapping for **policy makers**?

Different **levels** of definitions

I. **Geographical level (spatial resolution units):**

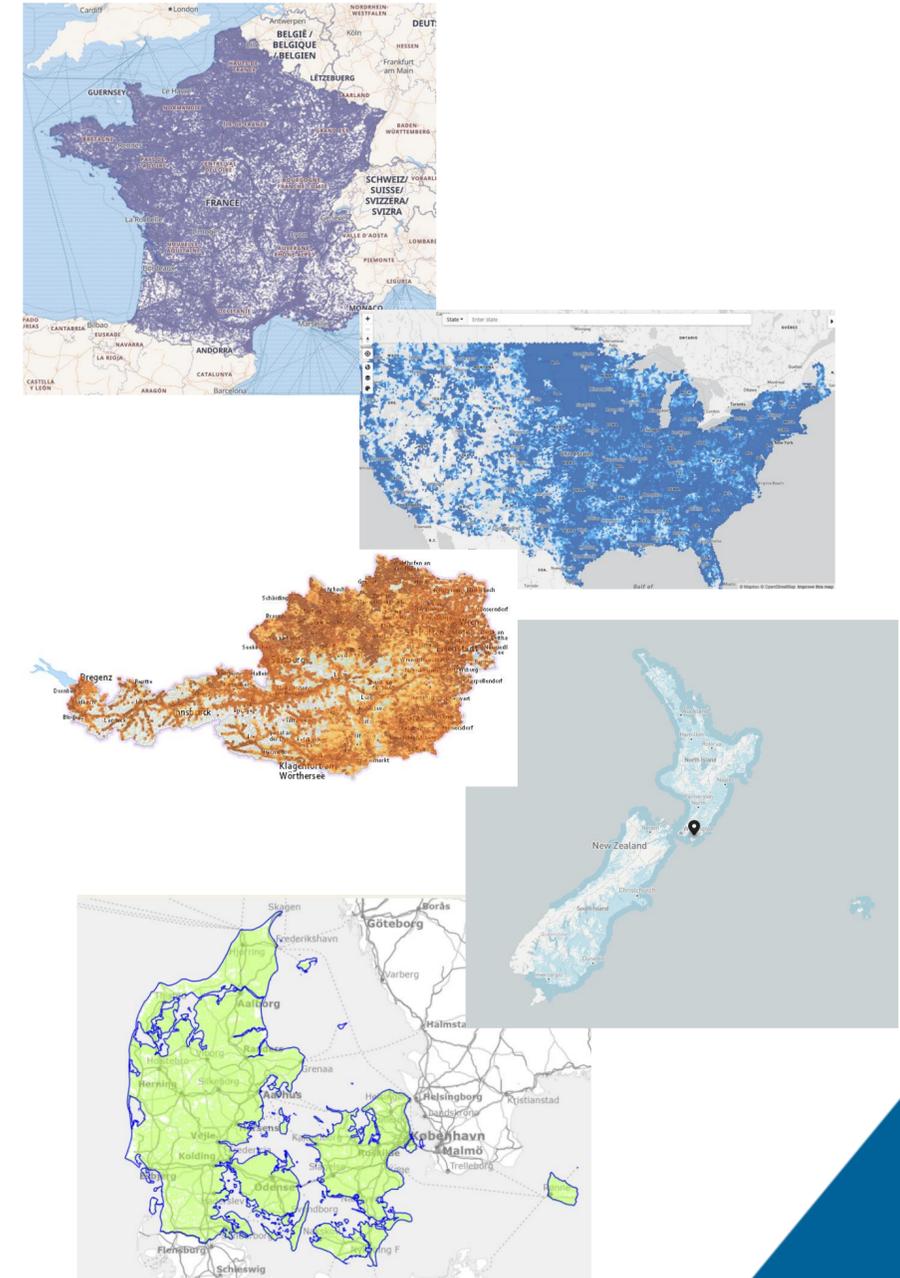
- What are the spatial units used to aggregate data in broadband maps?
- Defining common spatial units (e.g. exact points, grids, or existing geographical aggregation system, such as TL2/TL3 (NUTS) or postal codes)
- Type/format of geospatial/geographical data (vector or raster data)

II. **Broadband indicators: availability (coverage and subs.):**

- Territorial (& population) coverage: available infrastructure by technology: How is coverage for mobile networks defined?
- Subscriptions (broadband penetration)

III. **Broadband indicators: performance**

- Coverage and/or subscriptions by speed tiers
- Coverage and/or subscriptions by other quality indicators



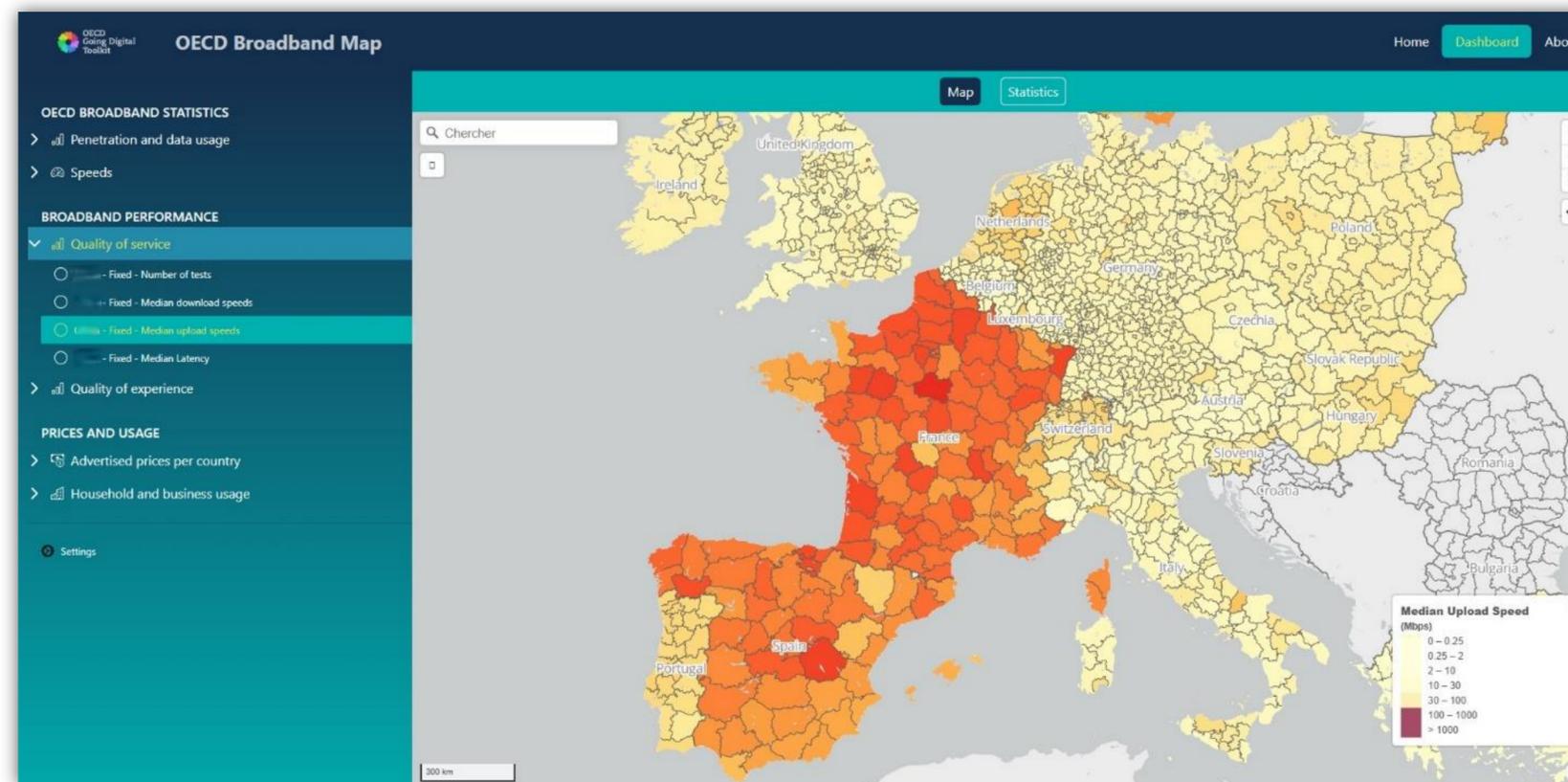


Broadband mapping endeavours at the OECD: Stay tunned!

A push toward exploiting more broadband geographical data in the OECD

Key steps :

- 2022-2024: **Expert group meetings**
- **35 experts** from countries and organisations
- **2 main data partners:** Ookla and Opensignal
- Publication of **reports & specific blogposts**

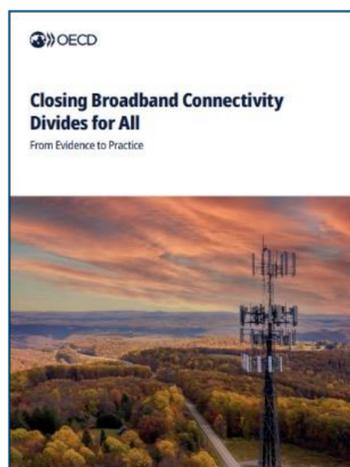


OECD Broadband Map BETA version



Stay tunned: Forthcoming one-stop shop for broadband geographical information for all OECD countries

Aligning coverage & performance definitions



Closing Broadband Connectivity Divides for All (2025)



Main challenges for the OECD Broadband map

- Harmonise definitions
- Sources based on voluntary contributions
- Combine different information (Coverage, QoS, etc)
- Increase visibility to be a true cross-national comparison tool



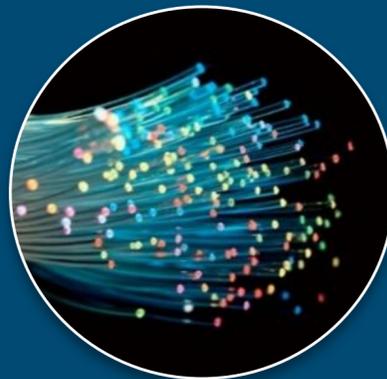
Policies to bridge digital divides: Overarching & tailored approaches

Sound regulatory and institutional frameworks



Fostering competition & managing spectrum efficiently

Drivers to expand network quality and coverage



Promoting investment & easing barriers to infrastructure deployment

Tailored approaches



Spectrum management: coverage obligations, priority assignment



Demand aggregation



Public-private partnerships



Bottom-up approaches: municipal and community-led networks



Connectivity targets and public programmes



Demand-side programmes

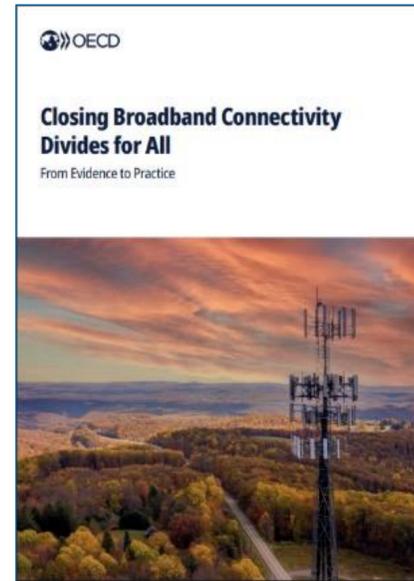


Let's stay
in touch!

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Access our OECD broadband data on: <https://www.oecd.org/digital/broadband/broadband-statistics/>
Explore our data visualisation tools on: <https://goingdigital.oecd.org/>

Further reading



**Closing Broadband
Connectivity Divides
for All ([2025](#))**



**Enhancing the
Resilience of
Communication
Network ([2025](#))**



**OECD Digital
Economy Outlook
(Volume 2) ([2024](#))**



**Financing
broadband
networks of the
future ([2024](#))**



**Communication
Regulators of the
Future ([2023](#))**

Robert Joyce
Virgin Media O2, Director - Mobile Access Engineering

Building the UK's Largest & Most Reliable Mobile Network

Prof. Robert Joyce, Director Mobile Access Engineering

March 2026





If you have coverage,
it should just work!

The UK's Most Advanced Mobile Network





Europe's most improved mobile network

A satellite view of the Earth showing the United Kingdom and surrounding regions. A vibrant rainbow ring is superimposed over the map. In the top right corner, a portion of a satellite's solar panel array is visible. The background is a deep blue space.

Now in space

Introducing O₂ Satellite

2

The UK's biggest mobile network
just got bigger!

Pau Castells
GSMA Intelligence

Afke Schaart
Eutelsat

Alexia Gonzalez Fanfalone
ECD

Robert Joyce
Virgin Media O2