Telecom Policy and Regulatory Landscape in the European Union

ADTRAN

Europe is at the cusp of a dramatic digital transformation – a fundamental shift that will revolutionise the way communities' function and societies come together. Major drivers for this shift are government policies and large-scale regulatory changes.

The roots of these drivers trace back to when the European Union (EU), once the global leader of mobile technology, realised that it had fallen behind other economies, such as the United States and some countries in the Asia-Pacific region. The European Commission argued that a contributing factor to the relatively insufficient EU performance of recent years was the fragmented structure of the EU telecommunications market.

This gave birth to the many governing bodies that exist in the EU today. Directives were put in place to create a strong digital economy that benefits both consumers and businesses alike.

The European Commission set out a Gigabit Society strategy for Europe to promote the availability and take-up of Very High Capacity Networks (VHCN) to ensure Gigabit connectivity for all. It started with an objective for 2020, which was to supply every European with access to at least 30 Mbps connectivity and 50 percent of households with 100Mbps or more.

2025 Objectives

100Mbps that is upgradeable to 1Gbps to every household

1Gbps to all public services and digitally intensive enterprises

Uninterrupted 5G wireless broadband coverage to all urban areas

And guess what? Money is pouring in.

€1.05 billion
Connecting Europe Facility (CEF)

€3 billion
Connecting Europe Facility 2021-2027 (CEF2)

€1 - 1.7 billion
Connecting Europe Broadband Fund (CEBF)

€6.9 billion
European Structural Investment Funds (ESIF)

€11 Billion
Federal Funds for Gigabit Broadband in Germany

£5 Billion
Federal Funds Rural Gigabit Connectivity Programme in the UK


European Union
Economic and political union between 27 European countries.
European Committee of the Regions
Advisory body representing Europe's regional and local authorities.
European External Action Service
Conducts EU foreign and security policy.
European Investment Bank
Provides funding for projects that achieve EU goals
European Commission
Politically independent executive arm that proposes and enforces legislation.
European Data Protection Board
Ensures that General Data Protection Regulation (GDPR) is applied consistently.
European Council
Defines the general political direction and priorities of the EU.
Court of Justice of the European Union
Ensures that EU law is interpreted and applied consistently.
European Court of Auditors
Audits EU funds and looks after the interests of EU taxpayers.
Council of the European Union
Voice of EU member governments, adopting EU laws and coordinating EU policies.
EU Institutions
Principal decision-making bodies work together to establish directives that provide a blueprint for development. Regulating agencies that enforce this blueprint and enable implementation.

Body of European Regulators for Electronic Communications

The Body of European Regulators of Electronic Communications (BEREC) is the regulating agency of the telecommunications market in the EU. It ensures a consistent application of the EU regulatory framework and promotes an effective internal market that benefits businesses and consumers.

National Regulatory Authorities (NRA) are federal authorities in each member state of the EU that are responsible for ensuring that rules are obeyed with regard to telecom infrastructure.

BEREC assists NRA, the European Commission, the Council, and the European Parliament to implement EU telecom rules by providing advice and opinions on regulatory matters.

The legal basis for BEREC is set out in Regulation (EU) 2018/1971 of the European Parliament and of the Council of 11 December 2018. The new legal framework established by the EECC requires BEREC to produce the 11 guidelines, of which Guidelines on Very High Capacity Networks (VHCN) was published in October 2020.

European Electronics Communications Code

The European Electronic Communications Code (EECC), also referred to as the Code, was established as part of Directive 2018/1972 and formally adopted in December 2018. EECC entrusts BEREC with the implementation of consistent regulatory measures.

The European Electronics Communications Code has the following four general objectives.

1. Promoting connectivity and access to, and take-up of, very high capacity networks.
2. Promoting competition and efficient investment.
3. Contributing to the development of the internal market.
4. Promoting the interests of the citizens of the Union.

Member states had until 21 December 2020 to incorporate the EECC into national law. Only the Czech Republic (9 November 2020), Denmark (9 December 2020), Finland (1 January 2021), Greece (23 September 2020), and Hungary (3 January 2021) have made the EECC national law.

The remaining countries in the EU are yet to incorporate EECC into national law.

The UK was in the post-Brexit transition period until 31 December 2020. During this period, the UK remained subject to the rights and obligations of EU membership; this includes the full transposition of EU directives in domestic law. On 2 December 2020, the United Kingdom passed The Electronic Communications and Wireless Telegraphy (Amendment) (European Electronic Communications Code and EU Exit) Regulations 2020, officially fully transposing the EECC into national law.

Status of transposing EECC into law as of February 27, 2021:

Austria	Greece	Netherlands
Belgium	Hungary	Norway
Bulgaria	Iceland	Poland
Croatia	Ireland	Portugal
Cyprus	Italy	Romania
Czech Republic	Latvia	Slovak Republic
Denmark	Lichtenstein	Slovenia
Estonia	Lithuania	Spain
Finland	Luxembourg	Sweden
France	Malta	United Kingdom
Germany		

- Transposed
- Delayed

Very High Capacity Networks

EECC defines a Very High Capacity Networks (VHCN) as a network consisting wholly of fibre elements at least up to the distribution point, or a network that can deliver fibre-like quality of service performance thresholds. A VHCN caters to the growing bandwidth demand by bringing optical fibre closer to the user. For the purposes of determining network performance, it is necessary to consider the network up to the end-user where the public network ends.

What qualifies as a VHCN?

Fixed-line connection
VHCN must consist of fibre rollout at least up to the multi-dwelling building.

Wireless connection
VHCN must consist of fibre rollout at least up to the base station.

BEREC also specifies quality of service performance thresholds as a benchmark for both fixed line and wireless VHCN.

	Fixed Line VHCN	Wireless VHCN
Downlink data rate	≥ 1000 Mbps	≥ 150 Mbps
Uplink data rate	≥ 200 Mbps	≥ 50 Mbps
IP packet error ratio	≤ 0.05%	≤ 0.01%
IP packet loss ratio	≤ 0.0025%	≤ 0.005%
Round-trip IP packet delay	≤ 10 ms	≤ 25 ms
IP packet delay variation	≤ 2 ms	≤ 6 ms
IP service availability	≥ 99.9% per year	≥ 99.81% per year

What technologies make the cut?

Fibre to the Home

Full-fibre networks that run fibre to the customer premises provide the most versatile networks and are best suited to hit the performance thresholds specified. Passive Optical Networking (PON) technologies GPON (2.5Gbps downstream and 1.25Gbps upstream) and XGS-PON (10Gbps downstream and upstream) enable cost-effective delivery of residential broadband and gigabit services using point- to-multi-point (P2MP) architectures. To leverage the best of both worlds, service providers can leverage Combo PON as it allows simultaneous delivery of GPON and XGS-PON over the same Optical Distribution Network, simplifying migration to multi-gigabit services while delivering a greater return on investment.

Fibre to the Building

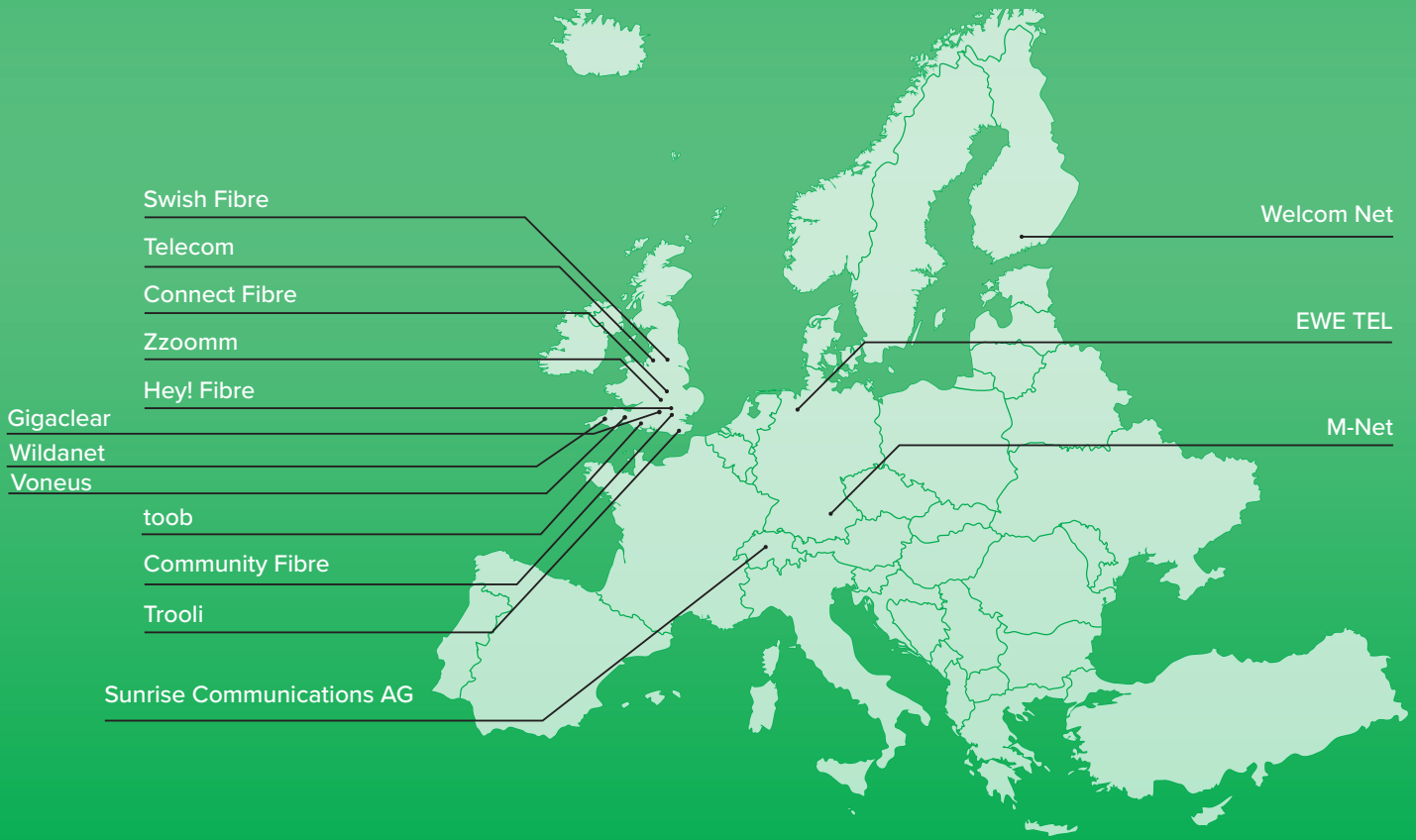
Gfast and DOCSIS are two Fibre-to-the-Building (FTTB) technologies that consist of fibre roll out up to the distribution point and copper or cable technology to the subscriber premises. Also considered fibre extension technologies, they deliver symmetric gigabit broadband utilising existing infrastructure, speeding time-to-market while lowering costs.

Fixed Wireless Access

Next-generation Fixed Wireless fibre extension solutions, including Citizens Broadband Radio Service (CBRS) and mmWave technologies, offer rapid and reliable connectivity in dense urban and underserved rural markets at a comparable or lower price than fibre. Urban fibre trenching is often prohibited by municipal regulations. It is also so costly to obtain the necessary permits and complete the install that there is no business case for doing so.

Fibre to the Base Station

In the case of mobile networks, LTE Advanced (4G) with carrier aggregation and MIMO12 qualifies as a VHCN. However, only carrier aggregation with the highest aggregated spectrum and MIMO with the highest number of parallel data streams are considered.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Your Network. The Way It Should Be.

ADTRAN innovations advance Gigabit Society goals. From cloud edge to subscriber edge, we help service providers around the world manage and scale services that connect people, places, and things to advance human progress. We are a leading provider of broadband access and aggregation with over 30 years of operational expertise in designing, manufacturing, and deploying broadband solutions. Our portfolio of fibre access (GPON / XGS-PON / Combo PON) and fibre extension technologies (Gfast / FWA) is complemented by a complete suite of Wi-Fi solutions for home and business applications.

We can also help you build, plan, and extend your wired or wireless broadband network. We offer a full spectrum of turn-key services including field survey, planning, engineering, installation/turn-up, and provisioning. Our broad portfolio of best-in-breed solutions allows operators to invest their scarce resources in connecting their communities, rather than expending resources managing their networks, and scrambling to cope with unforeseen subscriber demands.

We help operators build a sustained competitive advantage with the industry's broadest portfolio of broadband solutions in Europe that supports the vision of a Gigabit Society. Find out more by visiting **www.adtran.com/fiber-access**.

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