making communications work
for everyone

Connected Nations Update

Summer 2019

Connected Nations Update: Summer 2019 – Welsh version

REPORT:

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Contents

1. Overview

This is the second interim update to our last annual Connected Nations report (December 2018), based on mobile coverage and fixed broadband availability as of May 2019. This update tracks communications providers' progress in increasing the availability of communications services for people and businesses. It is a key part of our work to help ensure people across the UK can access the services they need, where they need them.

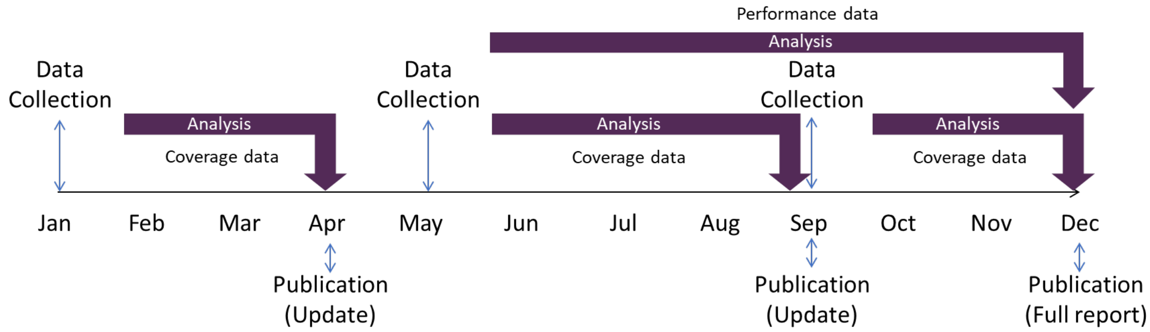
Key results from this update

- The number of properties able to access superfast broadband (as defined as download speeds of 30Mbit/s and above) is now above 28 million; the proportion of the UK with access to superfast connections remains broadly stable at 95% of UK premises, with the actual number of properties covered continuing to increase.
- Ultrafast broadband availability (>300Mbit/s)[1] is also broadly stable, although the rate of growth is slightly higher, with coverage increasing from 53% to 54%.
- Full-fibre broadband availability has also increased from 7% to 8%, with just under 2.5 million properties now covered. This is an increase of just under 400,000 in the four months since the previous update, with the commercial roll-out of full fibre now being delivered quicker than ever in the UK.
- The proportion of properties without access to a decent broadband connection (at least 10Mbit/s) remains at 2% based on current fixed network coverage. We expect that this figure will fall further when we complete our work to include the coverage of all major fixed wireless networks[2] in our reporting.
- Mobile coverage across all nations (by both premises and landmass) remains largely unchanged from our spring update in May, as providers near the end of the current round of roll out.
- The annual full Connected Nations report will be published in December 2019 and will include updated mobile and broadband coverage information - including fixed wireless options and data on mobile companies' initial roll-out of 5G. The report will also include data and analysis on network performance, capabilities and resilience, and will be accompanied as usual by specific reports for each UK nation.

Ofcom's Connected Nations reports are part of our work to monitor how well investment in broadband and mobile networks is meeting the increasing communications demands of society and the economy. We track progress in the availability of decent, superfast and ultrafast fixed broadband services, as well as 4G mobile services.

[1] Ultrafast broadband can be delivered through a variety of technologies such as G.Fast, DOCSIS (Cable) and full fibre.
[2] A number of specialist providers use radio technology to deliver broadband services to properties, without using any conventional copper or fibre "wired" connection. Increasingly, the major mobile networks are also offering such "fixed wireless access" services from their mobile networks.

Ofcom collects and publishes data throughout the year. Typical collection and publication milestones are as follows:



Charting the coverage of communication networks is important for Ofcom to understand where connectivity gaps still exist for consumers, and to identify where more needs to be done to make communications work for everyone.

The data from this update has also been used to refresh our coverage checker site and app. This enables people to check service availability and coverage where they live, work and travel. The dates in the figures and tables in this report are from data captured in May 2019.

2. Main findings

Fixed broadband

The number of UK premises able to receive superfast broadband has been broadly stable over the past 4 months remaining at around 95%. Superfast broadband availability has increased significantly over the last few years but, as the original BDUK-funded intervention schemes end, increases in rural areas yet to get access to superfast are likely to continue to slow down. However, new public sector interventions, such as the Scottish Government's R100 project, are expected to reverse this trend once underway.

Ultrafast broadband is also broadly stable, increasing slightly to 54% of premises. Ultrafast broadband is defined as download speeds in excess of 300Mbit/s and can be delivered through a variety of technologies such as full fibre and G.Fast[3], although in the UK it is predominantly delivered through Virgin Media's Cable broadband network.

Full-fibre broadband availability in the UK has risen to just under 2.5 million properties (around 8% of premises). This is an increase of over 1.1 million premises in the past year and 400,000 of these are since our spring update. There is now growing competition in the full fibre market with a range of larger and smaller full fibre providers rolling out networks in various parts of the country. The increase in availability shows these commercial roll-outs are now building at the fastest ever rate for full fibre in the UK.

The number of premises that cannot get decent broadband continues to fall, and is currently around 578,000 premises, not including Fixed Wireless Access. Decent broadband is defined as a download speed of at least 10Mbit/s and an upload speed of at least 1Mbit/s. People who do not have access to a decent and affordable service at their home or business, and who meet the eligibility criteria, will be able to request such a service under the new broadband USO. In June 2019, we published our statement designating BT and KCOM as the Universal Service Providers for the rest of the UK and Hull areas respectively. From 20 March 2020 people will be able to make a request under the USO by contacting the relevant Universal Service Provider directly.

Supporting investment

We share the Government's ambition for people across the UK to be able to access full fibre over the coming years - in rural communities as well as towns and cities. We are playing our part by promoting network competition to support significant, long-term investment in full fibre – giving people faster, better broadband while allowing companies who build these networks to make a fair return. More detail of our plans can be found in our statement on promoting competition and investment in fibre networks.[4]

[3] A high-speed Digital Subscriber Line (DSL) technology normally deployed in Fibre To The Curb (FTTC) street cabinets to deliver Ultrafast services over copper lines.

[4] Ofcom, 2019, *Statement: Promoting competition and investment in fibre networks – review of the physical infrastructure and business connectivity markets*

We expect availability of full fibre to continue to grow over the coming years, as existing measures from Ofcom and Government continue to have effect, new initiatives come into force and companies build on their deployments so far.

Other technologies can deliver services comparable with full fibre

Other technologies are also available that can deliver the Gigabit capable speeds that full fibre offers, most obviously the next iteration of Cable broadband being rolled out by Virgin Media, DOCSIS3.1. In addition, 5G technology offers not just the prospect of delivering better mobile coverage, but also “ultrafast” broadband in both urban and rural areas. This could potentially provide people with a similar experience to the speeds currently being delivered by full fibre and, in due course, be fully Gigabit capable. H3G have already launched an initial deployment in some parts of London, Vodafone are marketing their “Gigacube” product as part of their 5G deployment and EE are also expected to enhance their existing FWA offering with 5G.

Coverage data inaccuracies

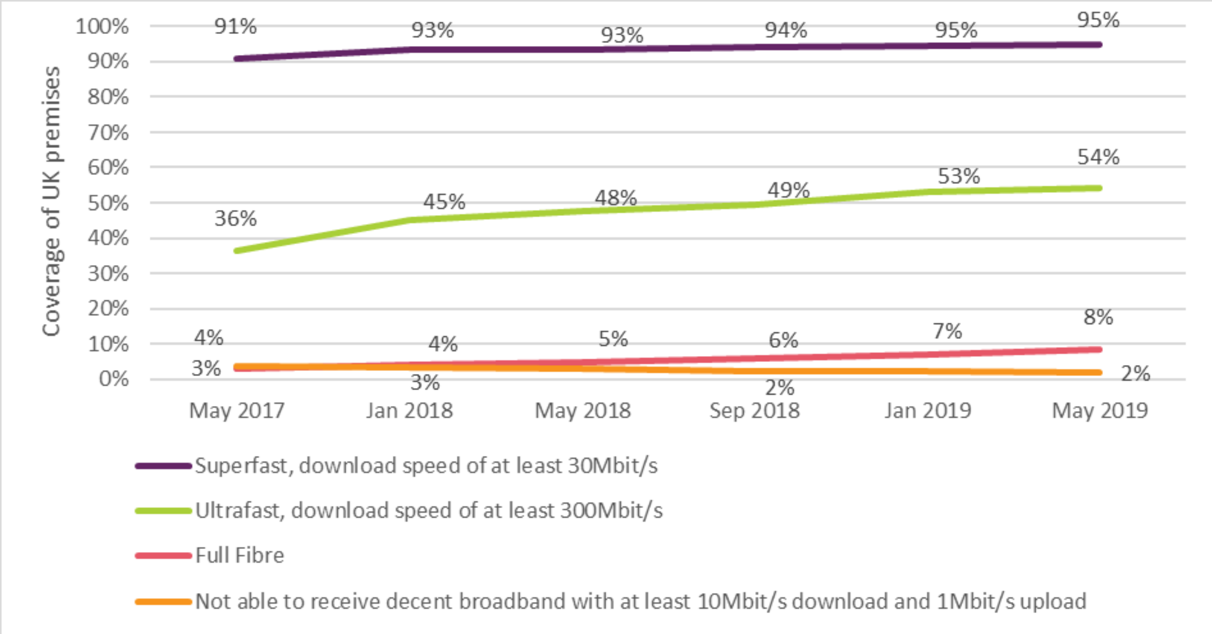
We have identified that one communications provider’s full fibre availability data was overstated for some premises, due to a mis-interpretation of the Ofcom definition of full fibre availability and how it applies for different installation practices[5]. The overall impact on the headline figures in this update is negligible but availability in a small number of urban boroughs was significantly overstated.

We take the accuracy of the data supplied to us seriously given its importance to policy making and the information provided to consumers on service availability. We will be publishing re-statements of our spring update data, (collected January 2019) with corrections to reflect this. We continue to work with all providers to ensure availability is measured and reported in a consistent manner and we encourage consumers and policy makers to share any specific concerns on data accuracy.

[5] We consider a property to have “full fibre coverage” only if:

1. fibre is deployed in close proximity to the premises, so only a dedicated fibre connection to the property is necessary to provide full (end to end) fibre connectivity
2. the end user would expect to pay only a published pre-agreed connection charge, if one was to be imposed.

Figure 1: Coverage of fixed broadband services in the UK since May 2017



Source: Ofcom analysis of operator data, May 2017 – May 2019

Mobile services

4G coverage (both indoor and outdoor) has remained broadly stable over the past 4 months. 9% of UK landmass does not have good 4G coverage from any operator.

We measure mobile coverage in a way that reflects the likely experience of people using their mobile phones. We currently define good mobile coverage as follows:

- **Telephone calls**: Nearly all 90-second telephone calls should be completed without interruption.
- **4G services**: Enhanced voice and data services where nearly all connections should deliver a speed of at least 2Mbit/s and a reliable voice connection. This is fast enough to browse the internet and watch glitch-free mobile video.

We have used crowdsourced data from consumer handsets and drive testing to identify the signal levels needed to meet these targets at least 95% of the time[6]. We continue to carry out our own detailed testing to check mobile operators are providing the signal levels they predicted.

How you measure coverage is important, but so is *where* you measure it. To reflect the places in which people are likely to use their mobile, we look at coverage in three ways:

- **Outdoor:** The proportion of geographic area where someone can use their phone while outdoors. This measurement is useful for assessing the likelihood of successfully using a phone while out and about.

[6] Crowdsourcing is the use of data from a large number of people and, in this particular case, their mobile phones. This data is automatically collected and made available for analysis.

- **Indoor:** The proportion of premises in which someone can use their phone. This measurement is useful for assessing the likelihood of successfully using a phone while at home or at work.
- **Roads:** The proportion of the network of A and B roads on which someone can use their phone while inside a vehicle.

Initiatives to improve coverage

Like our policy programme for encouraging full fibre and Gigabit capable services in the fixed network context, Ofcom is working with Government and industry to find ways to extend the scope and capability of mobile networks. We are making more spectrum available for operators, both through conventional auction processes and the innovative approaches to spectrum sharing we recently announced. Much of the focus of this is for new 5G technologies, but we are also actively engaged in supporting the extension of existing networks, particularly in more rural areas.

5G

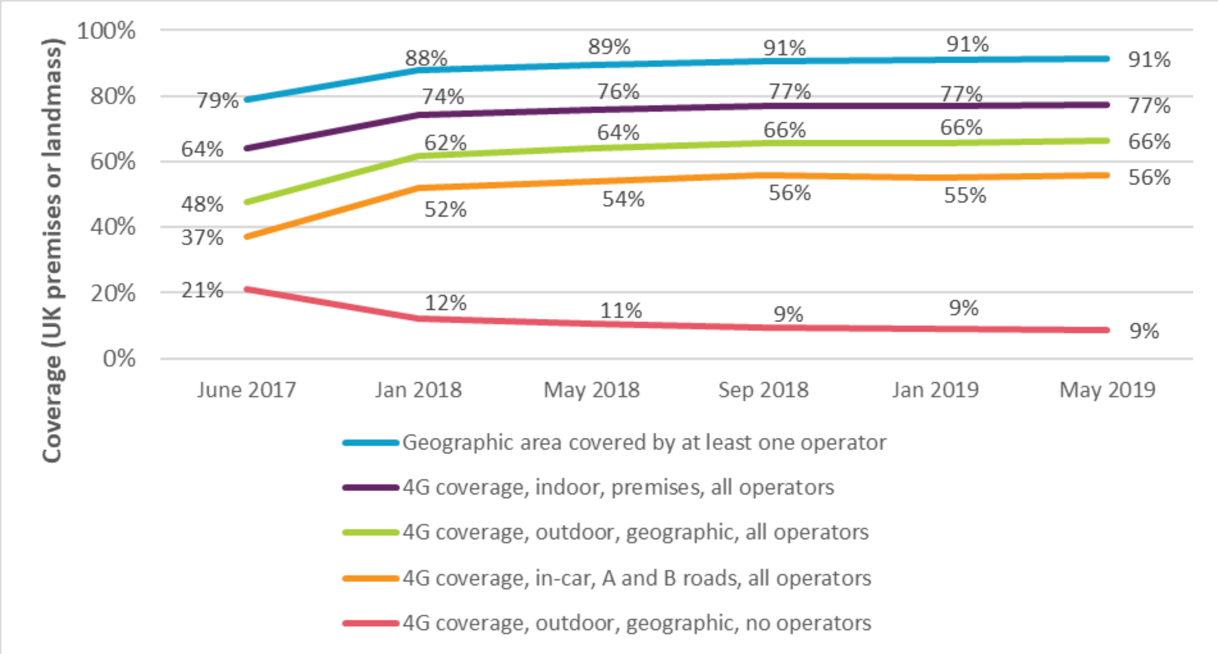
While some mobile companies have started rolling-out 5G services, none of these were deployed in May, when data for this update was collected. We will be collecting information on these roll-outs for the full Connected Nations report that we will publish in December. We are also considering what constitutes a good quality of experience with the new technology, so that our coverage estimations remain relevant to what users expect.

Coverage data inaccuracies

Figures for 4G coverage reported in the spring update (using data from January 2019) have been restated for some areas of the UK. This is a result of an inadvertent continued correction of figures provided to Ofcom by one MNO, after it was agreed that they needed to adopt a modified reporting approach, leading to an over-compensation for the original issue[7]. This led to slight over reporting of coverage that has now been identified and corrected here. The most significant impact is with regard to 4G “total not spots” which are now shown as 9% of the UK landmass, rather than 8% as shown in the previous update.

[7] The original issue was identified last year and reported on in Connected Nations 2018.

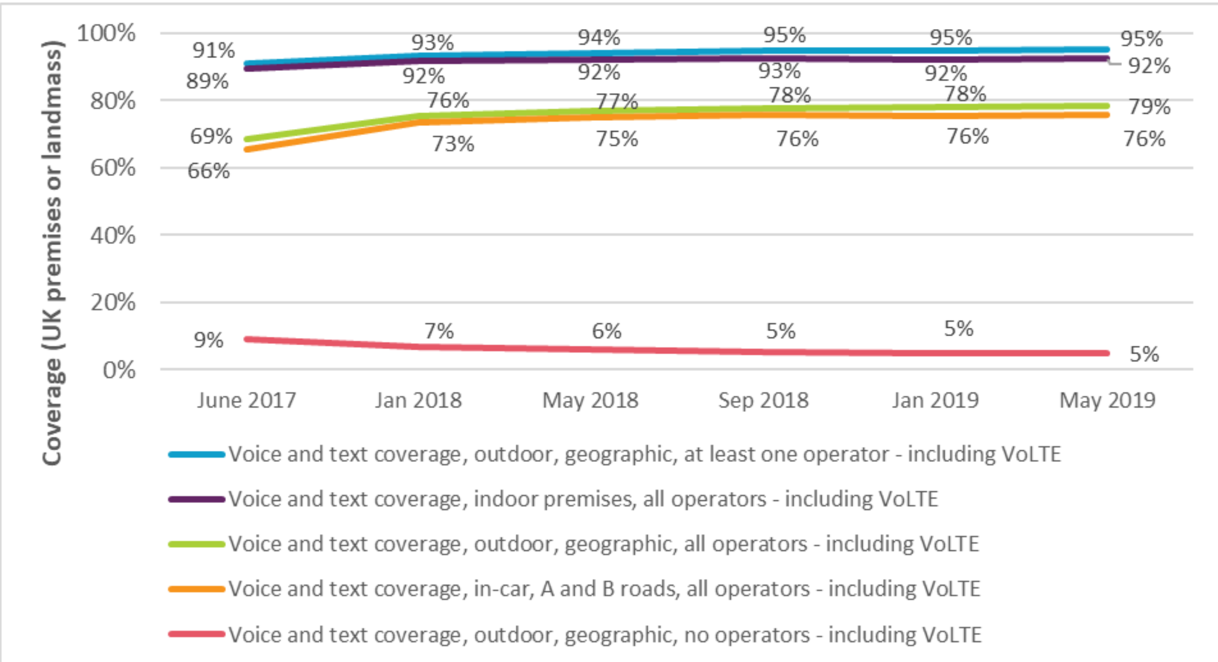
Figure 2: 4G coverage of mobile services in the UK since May 2017



Source: Ofcom analysis of operator data, June 2017 – May 2019 (restated at September 2018)

Coverage for calls and texts also remains stable over the past year. 92% of UK premises have indoor mobile call coverage from all four networks.

Figure 3: Voice and text coverage (both indoor and outdoor) since June 2017



Source: Ofcom analysis of operator data, June 2017 – Jan 2019 (restated at September 2018)

The picture varies across operators and across the nations. Coverage in individual nations can differ from the UK as a whole, particularly those with larger rural areas that have sparse populations, which can affect where companies roll-out coverage to. 91% of the UK's landmass has access to good 4G mobile coverage from at least one operator, while 66% has coverage from all four mobile network operators. Within this, individual operator coverage varies, with the highest being 85% and the lowest 76%.

3. Dashboards

In this section, figures incorporate all factors and corrections described earlier in this report.

Fixed broadband and mobile coverage – UK

Fixed broadband services	UK premises coverage as of:		
	May 2019	Jan 2019	Sept 2018
Access to a download speed of 10Mbit/s or higher	98%	98%	98%
Access to a download speed of 30Mbit/s or higher (superfast)	95%	95%	94%
Access to a download speed of 300Mbit/s or higher (ultrafast)	54%	53%	49%
Access to full fibre services	8%	7%	6%
Unable to access a download speed of 10Mbit/s and an upload speed of 1Mbit/s (Universal Service Obligation minimum) (see Note)	2%	2%	2%

Note 1: We consider a property to have "full fibre coverage" only if: 1. fibre is deployed in close proximity to the premises, so only a dedicated fibre connection to the property is necessary to provide full (end to end) fibre connectivity, and 2.the end user would expect to pay only a published pre-agreed connection charge, if one was to be imposed. This note applies to all individual Nations tables below.

Note: This may exclude broadband services available from some smaller providers. This note applies to all individual Nations tables below.

Mobile services	UK coverage as of:		
	May 2019	Jan 2019	Sept 2018
4G services (see Note 1)			
Premises (indoor) covered by all operators (see Note 2)	77%	77%	77%
Geographic area covered by all operators	66%	66%	66%
Geographic area *not* covered by any operator	9%	9%	9%
Coverage of A and B roads by all operators	56%	55%	56%
A and B roads *not* covered by any operator	5%	5%	5%
Telephone call services (2G, 3G and 4G) (see Note 3)			
Premises (indoor) covered by all operators	92%	92%	93%
Geographic area covered by all operators	79%	78%	78%
Geographic area *not* covered by any operator	5%	5%	5%
Coverage of A and B roads by all operators	76%	76%	76%
A and B roads *not* covered by any operator	2%	2%	2%

Note 1: Thresholds for 4G services: 4G (-105 dBm). This relates to nearly all connections being capable of delivering a connection speed of at least 2Mbit/s and reliable voice calls. This note applies to all individual Nations tables below.

Note 2: The indoor coverage figures in this report take into account the effects of walls, doors, roofs etc. which will reduce or block mobile signals as they pass through. We have assumed that all buildings block mobile signals in the same way (by reducing signal strength by 10dB). In reality, some buildings will block signals more than others and we will reflect this in subsequent updates. This note applies to all individual Nations tables below.

Note 3: Thresholds for voice and text are: 2G (-81 dBm), 3G (-100 dBm), 4G (-105 dBm). This note applies to all individual Nations tables below.

Fixed broadband and mobile coverage – England

Fixed broadband services	England premises coverage as of:		
	May 2019	Jan 2019	Sept 2018
Access to a download speed of 10Mbit/s or higher	99%	99%	98%
Access to a download speed of 30Mbit/s or higher (superfast)	95%	95%	94%
Access to a download speed of 300Mbit/s or higher (ultrafast)	56%	56%	52%
Access to full fibre services	8%	7%	6%
Unable to access a download speed of 10Mbit/s and an upload speed of 1Mbit/s (Universal Service Obligation minimum)	2%	2%	2%

Mobile services	England coverage as of:		
	May 2019	Jan 2019	Sept 2018
4G services			
Premises (indoor) covered by all operators	78%	78%	78%
Geographic area covered by all operators	82%	81%	82%
Geographic area *not* covered by any operator	2%	2%	2%
Coverage of A and B roads by all operators	62%	62%	63%
A and B roads *not* covered by any operator	2%	3%	2%
Telephone call services (2G, 3G and 4G)			
Premises (indoor) covered by all operators	93%	93%	93%
Geographic area covered by all operators	91%	91%	91%
Geographic area *not* covered by any operator	1%	1%	1%
Coverage of A and B roads by all operators	83%	82%	83%
A and B roads *not* covered by any operator	1%	1%	1%

Fixed broadband and mobile coverage – Northern Ireland

Fixed broadband services	**NI premises coverage as of**		
	May 2019	**Jan 2019**	**Sept 2018**
Access to a download speed of 10Mbit/s or higher	95%	95%	95%
Access to a download speed of 30Mbit/s or higher (superfast)	90%	90%	89%
Access to a download speed of 300Mbit/s or higher (ultrafast)	48%	45%	38%
Access to full fibre services	25%	16%	12%
Unable to access a download speed of 10Mbit/s and an upload speed of 1Mbit/s (Universal Service Obligation minimum	5%	5%	5%

Mobile services	NI coverage as of: May 2019	Jan 2019	Sept 2018
4G services			
Premises (indoor) covered by all operators	58%	59%	57%
Geographic area covered by all operators	78%	78%	79%
Geographic area *not* covered by any operator	3%	3%	2%
Coverage of A and B roads by all operators	47%	47%	48%
A and B roads *not* covered by any operator	6%	6%	6%
Telephone call services (2G, 3G and 4G)			
Premises (indoor) covered by all operators	79%	79%	80%
Geographic area covered by all operators	87%	87%	88%
Geographic area *not* covered by any operator	1%	1%	1%
Coverage of A and B roads by all operators	66%	66%	67%
A and B roads *not* covered by any operator	3%	3%	3%

Fixed broadband and mobile coverage – Scotland

Fixed broadband services	Scotland premises coverage as of:		
	May 2019	Jan 2019	Sept 2018
Access to a download speed of 10Mbit/s or higher	97%	97%	96%
Access to a download speed of 30Mbit/s or higher (superfast)	93%	93%	92%
Access to a download speed of 300Mbit/s or higher (ultrafast)	46%	45%	44%
Access to full fibre services	6%	5%	4%
Unable to access a download speed of 10Mbit/s and an upload speed of 1Mbit/s (Universal Service Obligation minimum)	4%	4%	4%

Mobile services	Scotland coverage as of:		
	May 2019	Jan 2019	Sept 2018
4G services			
Premises (indoor) covered by all operators	76%	75%	75%
Geographic area covered by all operators	41%	40%	39%
Geographic area *not* covered by any operator	20%	21%	22%
Coverage of A and B roads by all operators	43%	42%	41%
A and B roads *not* covered by any operator	10%	10%	11%
Telephone call services (2G, 3G and 4G)			
Premises (indoor) covered by all operators	91%	91%	91%
Geographic area covered by all operators	56%	56%	54%
Geographic area *not* covered by any operator	12%	13%	13%
Coverage of A and B roads by all operators	61%	60%	60%
A and B roads *not* covered by any operator	5%	5%	6%

Fixed broadband and mobile coverage – Wales

Fixed broadband services	Wales premises coverage as of:		
	May 2019	Jan 2019	Sept 2018
Access to a download speed of 10Mbit/s or higher	97%	97%	97%
Access to a download speed of 30Mbit/s or higher (superfast)	93%	93%	93%
Access to a download speed of 300Mbit/s or higher (ultrafast)	31%	31%	29%
Access to full fibre services	10%	7%	7%
Unable to access a download speed of 10Mbit/s and an upload speed of 1Mbit/s (Universal Service Obligation minimum)	3%	3%	3%

Mobile services	**Wales coverage as of:**		
	May 2019	**Jan 2019**	**Sept 2018**
4G services			
Premises (indoor) covered by all operators	70%	70%	69%
Geographic area covered by all operators	58%	57%	57%
Geographic area *not* covered by any operator	10%	10%	10%
Coverage of A and B roads by all operators	45%	45%	44%
A and B roads *not* covered by any operator	9%	9%	9%
Telephone call services (2G, 3G and 4G)			
Premises (indoor) covered by all operators	88%	88%	88%
Geographic area covered by all operators	76%	76%	75%
Geographic area *not* covered by any operator	4%	5%	5%
Coverage of A and B roads by all operators	69%	69%	69%
A and B roads *not* covered by any operator	5%	5%	5%

4. Earlier generation 3G data services – dashboards

The data that allows historical comparison with previous Connected Nations reports can now be found in the associated Connected Nations dashboard rather than tabulated here.