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for everyone

Connected Nations 2022

Annex 1: Methodology

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Contents

Annex

A1. Methodology

A1.1 This annex explains our approach to obtaining and analysing information from operators for the purposes of our Connected Nations report.

A1.2 The report uses data gathered from the communication operators in each sector, as well as information already held by Ofcom.

Calculating the 'premise base'

A1.3 This section explains how we identify, include, and categorise properties. In summary:

- We use property information from the Ordnance Survey's AddressBase database including both Royal Mail postal addresses and additional property details from Local Authority sources. This ensures our 'premises base' is comprehensive and allows us to measure how network expansion is affecting all sections of the UK.
- We consider the sub-properties within a building regardless of the number of postal delivery points serving them. This ensures our overall report, as well as our published maps and apps, better reflect coverage at individual premises across the UK and are consistent with coverage information provided by operators.
- In the report we will normally focus on coverage figures for residential properties. We will also highlight distinctions between residential and commercial premises where appropriate.

A1.4 The addressing products used in the annual Connected Nations include:

- Ordnance Survey AddressBase Premium Epoch 96.
- Ordnance Survey AddressBase Islands Epoch 96.

A1.5 Both products were released in October 2022 and contain address information valid up to September 2022.

A1.6 Since the last full Connected Nations report in December 2021 we have provided two additional updates which used:

- Ordnance Survey AddressBase Premium and Islands December 2021, Epoch 89 for the Spring Update.
- Ordnance Survey AddressBase Premium and Islands April 2022, Epoch 92 for the Autumn Update.

Future epochs

A1.7 It is expected that the OS AddressBase Premium and Islands epochs in Table 1 will be used to support Connected Nations updates in 2023. These are indicative and are subject to change.

Table 1: Estimated epoch dates for future publications

Timing point	Data collection	AddressBase Epoch	Epoch release date	Data cut date
Spring update	January	98	6 January 2023	28 November 2022
Summer update	May	101	11 May 2023	11 April 2023
Annual report	September	tba	tba	tba

Source: AddressBase epoch dates (accessed 5 December 2022).

Ordnance Survey AddressBase®

A1.8 Ofcom uses the Ordnance Survey AddressBase® Premium product to provide the base dataset used to assess broadband coverage for residential and commercial premises.

A1.9 AddressBase includes information about 44 million addresses, properties, and land areas where services are provided, by combining 3 datasets:

- Local Government National Land and Property Gazetteer (NLPG).
- Ordnance Survey MasterMap address layer.
- Royal Mail Postal Address File (PAF).

A1.10 Each record in AddressBase refers to a Basic Land and Property Unit (BLPU) and is defined in the British Standard for Addressing (BS7666) as an:

- Area of land in uniform property rights or, in the absence of such ownership evidence or where required for administration purposes, inferred from physical features, occupation or use.

A1.11 Each BLPU has a Unique Property Reference Number (UPRN), a spatial reference and one or more Land and Property Identifiers (LPI).

Method

A1.12 Our approach to identifying the 'premise base' includes three stages:

- Identifying 'Service delivery addresses'; the address locations that are indicative of where a service would be provided.
- Data cleansing: for use in reporting, the premise list is linked to other attributes to identify statistical or administrative geographic units, or rurality categories. Timing of data may impact on how many records may be linked.
- Reporting definition: the inclusion of all records based on property classification or status may change dependent on the specific focus of a report.

A1.13 A Service delivery address can be defined as a premise that is:

- able to receive mail either directly or indirectly (via a parent, sibling or holding address).
- is not a "parent-shell" address.

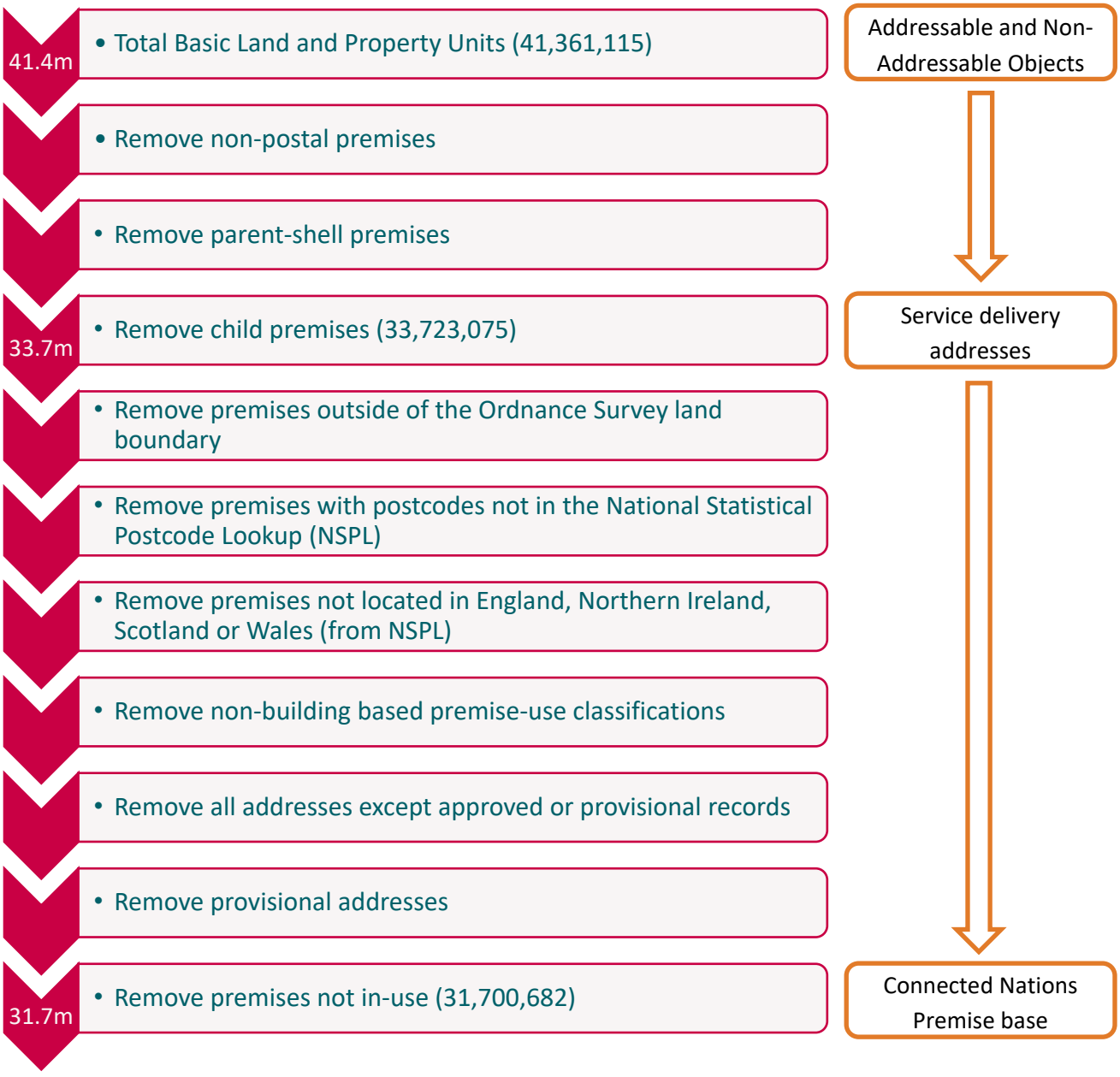
- does not have a parent address OR parent address is classified as a “parent-shell”.

A1.14 For the identification of all UPRNs that are considered valid for analysis the following source tables are used:

- [AB BLPU Table] AddressBase® Basic Land and Parcel Unit (BLPU) Table.
- [AB Classification Table] AddressBase® Classification Table.
- [NSPL Postcode Table] National Statistics Postcode Lookup Table.

Figure 1 shows the conceptual steps used to build the premise base.

Figure 1: Conceptual steps to calculating the premise base (Epoch 96 counts)



A1.15 The following SQL code is used to construct the 'premise base'. A separate process is undertaken to link operator data to individual addresses.

```
SELECT
	* -- all fields
FROM
	[AB BLPU Table] b
	LEFT JOIN [NSPL Postcode Table]  n ON UPPER(replace(b.postcode_locator,' ','')) =
UPPER(n.postcode) -- join to NSPL on postcode
	LEFT JOIN [NSPL Country Table]  nc using (ctry) -- join to the country lookup
	LEFT JOIN [AB Classification Table] c ON b.uprn = c.uprn --join to classifications on
uprn
	LEFT JOIN [AB Classification Table] cp ON b.parent_uprn = cp.uprn --join to
classifications on parent_uprn
WHERE
	b.addressbase_postal IN ('D','C','L') -- is an addressable object (postal address)
AND
	left(c.classification_code,1) != 'P' --not a parent shell
AND
	(
	b.parent_uprn is null --does not have a parent
	OR
	left(cp.classification_code,1) = 'P' --has a parent, but that parent is a parent-shell
	)
AND
	b.country !='J' --uprn is within Ordnance Survey Land Boundary
AND
	n.postcode is not null --postcode exists in nspl
AND
	UPPER(nc.country_name) IN ('ENGLAND', 'NI', 'SCOTLAND', 'WALES') --UPRN in
Eng,Sco,NI,Wal (excludes Channel Isl, IoM)
AND
	(
	left(c.classification_code,1)='C' -- Commercial
	OR left(c.classification_code,1)='R' -- Residential
	OR left(c.classification_code,1)='X' -- Dual Use
	OR left(c.classification_code,2)='ZS' -- Object of Interest->Stately Home
	OR left(c.classification_code,2)='ZW' -- Object of Interest->Place of Worship
	OR c.classification_code = 'OR04' -- Additional Mail / Packet Addressee
	)
AND
	b.logical_status IN (1, 6) --approved or provisional addresses only
AND
	b.logical_status = 1 --approved addresses only
```

```
AND
        (
        b.blpu_state IS NULL
        OR
        b.blpu_state = 2
        ) --in use premises
```

Comparison to previous approaches

A1.16 In our December 2019 Connected Nations report we provided further information and comparison to previous approaches on the calculation of the 'premise base'.

Data matching

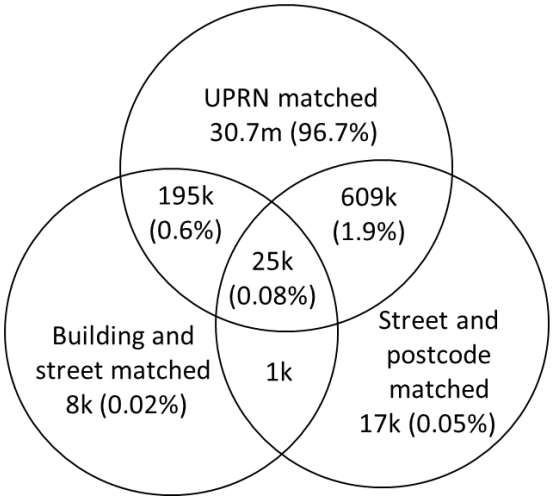
A1.17 The availability of address-level data allows us to create a comprehensive data set describing the characteristics of all available services and operators present at premises across the UK. Many operators provided a unique property reference number (UPRN), a common identifier available for use in the UK. Other operators provided address information that would need to be processed and linked to our premise base. Nearly 106 million records were received from fixed operators and 99.5% of our uniquely identified 'premise base' was matched to at least one operator using the UPRN or building address reference, which forms our basis for coverage reporting.

A1.18 Our approach to address matching involves comparing records using:

- Direct matches based on the UPRN hierarchy.
- Confident matches using addresses that have an identified building number or name, a street address and postcode.
- Approximate matches using addresses that have a street address and postcode.

A1.19 Figure 3 shows that nearly 30.7m premises (96.8%) were matched to operators only using the UPRN. Some premises were matched using different methods for each operator, but the UPRN was the principal method for matching 31.5m premises overall. A total of 26,000 premises (0.1%) were matched using address information only, compared with 31,000 premises in the December 2021 analysis.

Figure 2: Address match results to the premise base from all operators



A1.20 Of the remaining 173,000 (0.7%) of premises not initially matched by UPRN or building address information, at least 18,700 could be subsequently linked to a premise via the UPRN parent-child relationship, leaving a net total of 154,300 premises where no confident match could be used.

Postcode estimates

A1.21 Across the 106m records received from all fixed operators, just over 38,000 (0.04%) could not be assigned to a geographic location and 268,000 records (0.3%) could only be matched to a postcode.

A1.22 As the number of non-used records is a small volume, and operator overlaps reduce the number of premises for which no information is available to less than half a percentage point, we have not used any postcode estimate results to ensure that we are reporting as accurately as possible at the address level.

Fixed broadband networks

Coverage

A1.23 Our data on coverage of fixed broadband services is collected from several operators (see fixed network providers in our section on Obtaining information from providers). In 2022 operators were asked to provide data for each address where a service was provided or available to be provided, with a reference date of 1 September 2022.

A1.24 For the overall coverage of fixed broadband, we have identified the number of UK properties, our 'premise base'. For September 2022 we have used a premise base of 31.7 million.

A1.25 We use premises data from Ordnance Survey AddressBase Premium Epoch 96 and the Ordnance Survey AddressBase Islands Epoch 96. This is combined with additional geographic classifications from the ONS National Statistics Postcode Lookup table for August 2022 and Urban and Rural categories derived from the Locale classification.

Calculating availability

A1.26 Each operator provides information on the technology available together with predictions of download and upload speeds. After the address matching process these characteristics are assigned to each premise to enable further detailed analysis to be undertaken. We apply thresholds in our analysis to investigate different patterns of provision. For coverage we have used the maximum predicted download speed available at a premise to determine in which broadband category a premise is represented.

- Since the first Connected Nations report in 2011, we have tracked the progress of superfast broadband roll-out. We use 30 Mbit/s download speeds as the threshold for defining superfast services. We use the term 'Ultrafast' for services offering download speeds of 300 Mbit/s or higher.
- We also monitor the proportion of premises that do not have access to a decent broadband service, defined as a service capable of delivering a download speed of at least 10 Mbit/s and an upload speed of 1 Mbit/s. In this report we include all unmatched and unclassified premises when assessing their access to a broadband service.

Performance metrics, speeds, and data use

A1.27 We gathered data from many, but not all, of the fixed broadband internet service providers (ISPs), see fixed network providers in our section on Obtaining information from providers, on both their retail services and the services they provide to other ISPs as a wholesale service. This was provided with a collection date of 1 to 31 May 2022.

A1.28 Our analysis of active broadband speeds is based on the information provided by these ISPs regarding the maximum measured speed of each active line. This represents the maximum possible connection speed achievable between the ISP's access network and the consumer premises. Such line speed measurements are typically a few Mbit/s lower than maximum access line speed ('sync' speed), and they typically vary throughout the day depending on the level of congestion in the ISP's network.

A1.29 This data was collected at the address-level and by line identifier and involves a more complex matching process. In addition to matching records via the UPRN or address to our 'premise base', we also need to match data from retail broadband providers including BT Group, Sky, TalkTalk and Vodafone to their corresponding infrastructure (e.g. Openreach) providers' data using either a line identifier (where these are common) or via address matching.

A1.30 Only lines that could be assigned to a geographic location at postcode level and with a measured speed greater than zero were used in the line performance and data usage calculations. These criteria were met by 24.6 million records.

A1.31 We also gathered supplemental data from fixed broadband providers in relation to: consumer demand, and network data traffic, during the period from 1 February 2022 to 31 July 2022; take up of full fibre and gigabit-capable services; and changes to fixed voice

services in the last twelve months (the latter with a collection date chosen by providers in the period 17 August 2022 – 7 September 2022).

Estimating take-up

A1.32 Take-up is estimated from the lines reported as discussed above (as of May 2022) as well as the total premises as of May 2022 to ensure consistency.

Data use

A1.33 Our analysis of data use is calculated from the amount of data downloaded and uploaded on each line as reported by operators. We also collected data on the total data use between the hours of 6pm and midnight, to assess data use at 'peak times'. Our analysis considers all lines where the amount of data downloaded was greater than zero.

A1.34 Our analysis of patterns of daily data use is based on providers' reports of what they observed on their networks, aggregated across providers.

Fixed voice services

A1.35 We asked the providers of fixed broadband communications to provide a breakdown of the technology used to delivery voice services over the access network. Some broadband providers do not offer voice services, and many internet voice service providers do not deploy fixed broadband networks and were therefore not approached to provide data to us, so the results obtained are indicative only.

A1.36 We also asked about the number of customers that migrated from a PSTN-based voice service to a Voice over Broadband service in the 12 months up to the collection date, and the number of customers that had moved to a broadband only service during the same period.

Mobile

Coverage

A1.37 Our data on the coverage of mobile networks was collected from the four mobile network operators, EE, Virgin Media O2, Three and Vodafone (see mobile network operators in our section on Obtaining information from providers) as 100m x 100m pixels referenced against the Ordnance Survey Great Britain (OSGB) grid system. Coverage for all networks was of 1 September 2022.

A1.38 Premises coverage is calculated from the base of 31.7 million premises derived from the Ordnance Survey AddressBase Premium Epoch 96 and the Ordnance Survey AddressBase Islands Epoch 96. This is combined with additional geographic classifications from the ONS National Statistics Postcode Lookup table for August 2022 and Urban and Rural categories derived from the Locale classification.

A1.39 Roads data is taken from Ordnance Survey and Northern Ireland Land & Property Services open data sources.

A1.40 We apply the technology-specific thresholds to each of 100m x 100m pixels to determine whether a sufficiently strong signal is available to successfully make a phone call or send or receive data. These pixels are aggregated to provide an estimate of either the landmass or the number of premises that are covered by the corresponding mobile technology.

A1.41 In 2018 measurement work was undertaken by Ofcom to identify the minimum coverage level (the technology-specific threshold) required to deliver a good quality of experience to consumers on the 4G network. We also identified minimum coverage levels for 2G and 3G networks, which allows us to present a consistent view of coverage on all these networks to consumers.

A1.42 For 2G, 3G and 4G networks, we define coverage based on the minimum signal strength required to at a minimum deliver a 98% probability of making a 90 second telephone call successfully. In the case of 4G specifically, our definition also delivers a 95% chance of getting a download speed of at least 2Mbit/s. We use the signal strength thresholds shown in Figure 6 when estimating coverage.

Figure 3: Mobile strength thresholds

Service		Metric	Outdoor	Indoor and in-car
2G		RxLev	-81dBm	-71dBm
3G		RSCP CPiCH	-100dBm	-90dBm
4G/enhanced data		RSRP	-105dBm	-95dBm
Voice	2G	RxLev	-81dBm	-71dBm
	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-105dBm	-95dBm
Basic data	3G	RSCP CPiCH	-100dBm	-90dBm
	4G	RSRP	-115dBm	-105dBm

A1.43 For 5G networks, we define availability of coverage based on the minimum signal strength (SS-RSRP) required for devices to establish a reliable 5G connection. This definition supports a reporting framework suitable for different variants of 5G in low, mid and high frequency bands, without inferring a typical service or performance (although where a reliable connection is established, we would expect core data services to be supported, subject to available capacity).

A1.44 In this year's reporting, we provide a view of outdoor 5G coverage availability across a range that provides increasing confidence of a reliable 5G connection, from high confidence (where a signal strength of -110 dBm or better is predicted) to very high confidence (where a signal strength of -100 dBm or better is predicted). We associate the High Confidence level with at least an 80% probability of coverage being present in the predicted location, and the Very High Confidence level with a circa 95% probability.

A1.45 Noting that operators supply predictions to Ofcom on the basis of a 50% confidence level across a pixel, to establish these higher confidence levels we have worked back from the on-the ground thresholds typically used as the limit for maintaining a 5G connection. We have then accounted for the overall effectiveness of operators' 5G predictions (*prediction error statistics*) and local level variability, as well factoring in the differences between handset performance. The consequential combined standard deviation across these effects (which we have taken to be in the region of 12 dB), enabled us to establish signal strengths at which predictions supplied to us on a 50% reliability basis from a reasonable prediction model were likely to align with high (-110 dBm @80%) and very high confidence (-100dBm @ 95%) of coverage in a given location.

Mobile prediction models

A1.46 The mobile coverage figures provided in this report rely on the accuracy of coverage prediction data supplied by the mobile operators. We note that operators continue to update and improve their prediction models, which is welcome.

A1.47 We take the accuracy of the data supplied to us seriously given its importance to policy making and to ensuring people are well informed about available coverage. We will continue to monitor, through drive testing, the accuracy of all operators' coverage predictions.

A1.48 We are aware that operators continue to work on refining their 5G predictions and Ofcom will continue to engage and encourage operators to focus on an approach that provides consumers with confidence in coverage being reliably available where it is predicted.

Data use

A1.49 This data was collected in May 2022 and included information on the amount of data uploaded and downloaded on each mobile cell in these networks. The geography of data traffic is defined by the location of the associated mobile cell base station.

Fixed Wireless Access

A1.50 Fixed Wireless Access services can be provided on a mobile network by Mobile Network Operators (MNOs) or on a dedicated wireless network by Wireless Internet Service Providers (WISPs).

Fixed Wireless Access coverage from WISPs

A1.51 Our analysis of Fixed Wireless Access coverage by WISP uses data from 26 providers relating to their network as of September 2022, providing us with a list of premises based on their modelling of their network. The list of fixed wireless access providers included in our analysis is provided in our section below on Obtaining information from providers.

A1.52 The data was matched against our 'premise base' in the same way as fixed broadband coverage.

A1.53 We have also carried out some research this year, looking into the speeds that can be delivered to consumers using WISP networks. We have a long-established programme on home broadband performance research on fixed networks[1] and using the same approach, we conducted measurements on five WISP networks. Our results show that WISP networks can deliver decent and superfast speeds.

Fixed Wireless Access coverage from MNOs

A1.54 FWA services are also available on mobile networks, where the capacity is shared with mobile users. We asked MNOs for a list of the properties that could be served with FWA by their network without the installation of new access points, and to specify whether this service is at least a decent broadband service. An explanation of the use of FWA to deliver a decent broadband service is available in our statement on Delivering the Broadband Universal Service.

A1.55 We encourage all FWA providers to submit updated data and invite any provider which has not yet submitted data or are not listed in the table to contact us at connectednationsreport@ofcom.org.uk.

Urban and rural classifications

A1.56 We have used the Locale classification to identify premises as being in an urban or rural area. Locale is a third-party data source based on the analysis of 2011 census output areas (OAs). Each OA is assigned to one of seven Locale Groups using a combination of Government conurbation definitions, population density at the OA- and postcode sector-levels, urban sprawl boundaries, OS roadmaps and additional visual inspection.

A1.57 We assign the Locale classifications to either Urban or Rural based on the following:

- Urban: Codes A to C relate to settlements with populations over 10,000 and codes D to E relate to settlements with populations over 2,000
- Rural: F to G relate to settlements with populations under 2,000

A1.58 For fixed broadband analysis each premise is assigned to a census output area via its postcode. For mobile analysis, each pixel is assigned to a census output area through a spatial comparison of the pixel OSGB coordinate to the corresponding census output area polygon. The Locale urban and rural classification is then matched to these records via the census output area.

Geographic boundary change

A1.59 Since the publication of our 2021 annual report there have been no changes to local authorities.

[1] This research uses a panel of consumers, who have a monitoring unit connected to their broadband router. This measures the performance of the home broadband services, including metrics such as download and upload speeds, latency, jitter and packet loss.

A1.60 There are 374 Lower Tier authorities in the United Kingdom: 309 in England, 11 in Northern Ireland, 32 in Scotland, and 22 in Wales.

A2. Glossary

2G: Second generation of mobile telephony systems, launched in the UK in 1992. Uses digital transmission to support voice, very low-speed data communications, and short messaging services.

3G: Third generation of mobile systems, launched in the UK in 2003. Provides low-speed data transmission and supports multi-media applications such as video, audio and internet access, alongside conventional voice services.

4G: Fourth generation of mobile systems, launched in the UK in 2012. It is designed to provide faster data download and upload speeds on mobile networks and can also support VoIP services.

5G: Fifth generation of mobile technology standards.

Access network: An electronic communications network which connects end-users to a service provider, running from the end-user's premises to a local access node and supporting the provision of access-based services. It is sometimes referred to as the 'local loop' or the 'last mile'.

Base station: This is the active equipment installed at a mobile transmitter site. The equipment installed determines the types of access technology that are used at that site.

Broadband: A data service or connection generally defined as being 'always on' and providing a bandwidth greater than narrowband connections.

Decent Broadband: A data service that provides fixed download speeds of at least 10 Mbit/s and upload speeds of at least 1 Mbit/s or an indoor 4G mobile service with a connection speed of at least 2 Mbit/s.

Full Fibre coverage: Services that provide a fibre optic cable from the exchange to the end user's home or office. In 2018 we modified this definition to: where the network has been rolled out to a “lead-in” that will serve the consumer end premise and where the consumer would expect to pay a standard installation charge for that connection.

Gigabit coverage: Services that provide a fibre optic cable from the exchange to the end user's home or office and coaxial cable services delivering DOCSIS 3.1 services.

IP: Internet Protocol. This is the packet data protocol used for routing and carrying data across the internet and similar networks.

ITU-R: International Telecommunications Union Radiocommunication Sector. One of the three sectors of the ITU, responsible for radio communication.

ITU-T: International Telecommunications Union Telecommunication Standardization Sector. One of the three sectors of the ITU, responsible standards in telecommunications.

Not-spot: An area which is not covered by fixed or mobile networks.

RSCP CPiCH: The Received Signal Code Power on the primary Common Pilot Channel for 3G networks

RSRP: The Reference Signal Received Power in 4G networks

RxLev: The Received Signal Level in 2G networks

Superfast broadband: A data service that can deliver download speeds of at least 30 Mbit/s.

SS-RSRP: The Synchronization Signal reference signal received power in 5G networks.

Ultrafast broadband: A data service that can deliver download speeds of at least 300 Mbit/s.

Voice (Mobile): Mobile voice services where nearly all 90-second calls are completed without interruption from any of 2G, 3G or 4G mobile services.

VoIP: Voice over Internet Protocol. A technology that allows users to send calls using internet protocol, using either the public internet or private IP networks.

Wholesale Services: Products and services made available to third party CPs on a wholesale basis and which act as inputs to their Services.

WISP: Wireless Internet Service Provider. Broadband service providers using a wireless link between a provider's mast site and an external antenna fixed to a customer's premise. These are dedicated networks for broadband customers only. They commonly use license exempt or light licensed spectrum such as the 5GHz band.

A3. Obtaining information from providers

A3.1 Ofcom requested data from communication providers using our powers under section 135 of the Communications Act 2003 and Regulation 17 of the Statutory Instrument 2016/607.

A3.2 Under section 134A of the Act[2] Ofcom is required to prepare a report for "each relevant period" as defined in section 134A(4) of the Act; the matters on which we need to report are listed in section 134B of the Act.

Fixed network providers

A3.3 The data for fixed networks was obtained, or continued to be used, from the following providers:

- 1310
- 4th Utility (Vision Fibre)
- Airband
- Ask4
- Atlas Communications
- Axione
- B4RN
- Box Broadband
- brsk
- BT Group
- CityFibre
- Community Fibre
- Connect Fibre
- Country Connect
- County Broadband
- Electronic Communities
- FACTCO
- F&W Networks
- FibreNest
- FibreSpeed
- Fibrus
- Full Fibre
- G.Network
- Gigaclear
- Glide
- GoFibre (Borderlink)
- Grayshott Gigabit
- Hampshire Broadband
- Hyperoptic
- ITS
- Jurassic Fibre
- KCOM
- Lightning Fibre
- LightSpeed
- Lothian Broadband
- MS3
- MyFi Wales
- Netomnia
- OFNL
- Openreach
- Orbital Net
- Sky
- Spectrum Internet
- Swish Fibre
- TalkTalk
- Technological Services
- Telcom Infrastructure
- Toob
- Trooli
- Truespeed
- Upp
- Velocity1
- Virgin Media O2
- Vodafone

[2] Sections 134A and 134B of the Act, as amended by Section 1 of the Digital Economy Act 2010, can be found here: https://www.legislation.gov.uk/ukpga/2010/24/section/1

- Voneus
- VX Fiber
- Wessex Internet
- WightFibre
- Wildanet
- York Data Services
- Zzoomm

Mobile network operators

A3.4 The following mobile network operators supplied data for use in this report:

- Everything Everywhere ("EE")
- Hutchinson 3G UK ("Three")
- Virgin Media O2
- Vodafone

Fixed wireless access operators

A3.5 The data for fixed wireless access networks was obtained, or continued to be used, from the following providers:

Wireless Internet Service Providers

- Airband
- Beacon Broadband
- Boundless Networks
- Broadband for Rural Kent (B4RK)
- Connexin
- Country Connect
- County Broadband
- Cromarty Firth Wireless
- Fram Broadband
- GoFibre (Borderlink)
- Highland Community Broadband
- Highland Wireless & IT Solutions
- Intouch
- Kencomp
- Locheilnet
- Loop Scorpio
- Lothian Broadband Networks
- Orbital Net
- Quickline Communication
- Secure Web Services Limited (SWS)
- Voneus/IRG Computers Ltd (ResQNet)
- Wessex Internet
- WideFM/Juice
- Wifi Scotland
- WifiX
- Wildanet

WISPs are removed from the list if we do not get new data or confirmation that previous data remains unchanged.

Mobile networks

- Everything Everywhere (“EE”)
- Hutchinson 3G UK (“Three”)