

Reference: 01691219

Information Requests
information.requests@ofcom.org.uk

27 November 2023

Freedom of Information request: Right to know request

Thank you for your request for information concerning 5G masts in Swindon, SN3 4DU, and the Swindon Wiltshire area. Your request was received on 4 October 2023 and we have considered it under the Environmental Information Regulations 2004 ('the EIR').

Your request & our response

1) Please provide a list of ALL WIFI , 5g antennas /masts and monopoles in the Swindon Wiltshire area detailing cell/location number , full address and postcode and what type of mast it is.

We have interpreted 5g antennas/masts and monopoles to mean physical telecommunication sites with transmitters of mobile phone signals. Masts (but equally buildings, rooftops, street furniture etc) are the physical structures which host transmitting antennas and may cover a range of technologies, up to and including 5G. We do not hold information to differentiate between transmitters installed on separately built masts or on other sites such as in or on buildings and street furniture. A site may also contain one or more transmitters which may belong to one or more mobile network operator and we do not hold information per individual mast or antenna.

Please note that Wifi is a licence-exempt technology which may be installed and used freely within set technical and other regulatory requirements. We therefore do not hold records of those installations.

As the communications regulator we collect information, which includes information supplied by UK mobile network operators about mobile sites, for example, to assist with our Connected Nations and Infrastructure Reports. These reports are published annually on our website [here](#). As stated above, we do not collect information on Wifi.

For the reasons set out below, we consider the full address and postcode of the mobile sites to fall under an exemption in the EIR and we have therefore decided not to disclose it.

The EIR provides that a public authority may refuse to disclose environmental information requested to the extent, amongst other things, that its disclosure would adversely affect international relations, defence, national security or public safety (regulation 12(5)(a) of the EIR), and in all the circumstances of the case, the public interest in maintaining the exception outweighs the public interest in disclosing the information.

Ofcom has considered your request in light of the relevant statutory scheme. We have also considered advice from HM Government on the potential implications of disclosure of information relating to the location of mobile sites (and other information relating to mobile sites) in the context of national security. HM Government has raised significant concerns with Ofcom about the release of this type of information on national security grounds and has advised that disclosure of this type of information would adversely affect national security.

Taking this into account, Ofcom considers that regulation 12(5)(a) of the EIR is engaged; specifically, that disclosure of the information would adversely affect national security.

In applying this exception, Ofcom has balanced the public interest in withholding the information against the public interest in disclosing it and decided that in all the circumstances of the case the public interest in maintaining the exception outweighs the public interest in disclosure. In assessing this, under regulation 12(2), we have also applied a presumption in favour of disclosure. Annex A sets out the exception in full, as well as the factors we considered when deciding where the public interest lay.

2) Please can you confirm what the power output from all these masts /antennas/etc in the Swindon area

We do hold some data supplied by the UK mobile network operators about power output from masts/antennas/etc in the Swindon area. We have supplied this data in tabular form in the attached pdf file. The file contains the mobile UK network operator power information we hold for sites located within the geographic boundary of Swindon Borough Council. Please note:

- The data in the file is organised by Site, Sector¹, and Power (in EIRP or TRP).
- We have not provided location information for these sites (see the answer to question 1) above). There are 167 sites within the Swindon area for which we hold data, these have been anonymised as site1 to site167. Each site will typically have a number of sectors and we have anonymised each sector.
- For each unique site and sector combination we have provided the power information in the format provided to us by the UK mobile network operators. This means the power is provided as either the equivalent isotropically radiated power (EIRP) or the total radiated power (TRP) in units of decibels relative to a milliwatt (dBm). Where power is supplied as EIRP it relates to non-active antenna systems; where it is supplied as TRP it relates to active antenna systems.
- We asked operators to collect the information in the attached file on 2 May 2023 and it should therefore be accurate as at that date. The operators may however have subsequently changed the configuration of their networks and sites in Swindon. We cannot guarantee the accuracy of the data supplied to us in terms of any errors or omissions.

You may also find information on transmitter power in the UK mobile network operators licences. Copies of these are published on Ofcom's website in the pages linked from [mobile and wireless broadband](#). These set out the maximum permitted transmitter power levels. In order to optimise network planning, actual transmission powers are often significantly lower than the permitted maximum. However the output power will vary dynamically due to many factors including call traffic volumes, weather conditions and the amount of bandwidth in use.

¹ For practical reasons, coverage from a mobile phone site is normally split into a number of sectors (typically 3 for each technology and frequency band combination) with a separate antenna used to provide the signal in each sector.

Further information on power levels has been published by [ICNIRP](#) and the [UK Health Security Agency](#) (UKHSA). The UKHSA states “The maximum output power from each base station is set by operators to balance call/data traffic across the different sites that make up the network. The actual output power at any given time depends on the amount of calls and data being handled and use of excessive power at any given site reduces the capacity of the network for other users. So, optimising transmitted powers to be the minimum needed to carry out communications effectively is an important feature of efficient network design. It also tends to keep public exposures low.”

3) Please provide specific antennae design details from the Telecom applicants for the above stated masts in the Swindon area and how you would deem/verify a mast/antenna etc to be set to be compliant with the ICNIRP limit? What are the latest /updated calculations and EMF readings from these masts

It may be helpful for me to first provide some background on our role in relation to radio spectrum and electromagnetic fields (EMF). Ofcom does not authorise or control the physical telecommunications masts or antennas; rather, we authorise and manage the use of the radio spectrum in the UK, including the spectrum used by mobile network operators (MNOs). We issue licences and also set conditions for the use of spectrum without a licence (i.e. licence-exempt use). Further information on our role in relation to [EMF](#) is available on our website (see also our [General EMF queries](#)).

Ofcom has no involvement in the planning process for physical structures such as masts, buildings etc that may host radio equipment, or in the enforcement of planning law. This is a matter for local planning authorities that administer the planning laws locally and issue permission to build through the normal planning process. If you have any views or questions about planning applications or design details for any specific site, you can address those to the [relevant local planning authority](#). There are also [Codes of Practice in England and Wales](#) which explain that MNOs are committed to compliance with internationally agreed levels of electromagnetic field emissions and requires MNOs to sign a declaration (sometimes referred to as an “ICNIRP Certificate”) confirming that they have complied with these levels when applying for planning permission for a new site or a change to an existing site.

Consistent with advice from the UK Health Security Agency, we do however include a condition in spectrum licences, requiring licensees to ensure that their use of equipment (operating above a certain power) complies with the internationally agreed EMF levels in the ICNIRP Guidelines for the protection of the general public.

Ofcom carries out unannounced audits of EMF levels around radio transmitters and can take enforcement action against spectrum licensees if they produce EMF at levels above those set out in the ICNIRP Guidelines. We assess compliance taking into account our [Guidance on EMF compliance and enforcement](#). Reports of such audits can be found at [Electromagnetic field measurements near mobile base stations](#) which advises that we randomly select masts to undertake EMF audits on and that our measurements across the country have shown that EMF levels are well within the general public EMF limits. We have completed two audits in Swindon – one in [February 2022](#) and one in April 2023 (a report of this should be available on our website shortly).

We hope this response is helpful in explaining our position. You may also find helpful information on our [masts and planning](#) webpage.

If you have any further queries, then please send them to information.requests@ofcom.org.uk quoting the reference number above in any future communications.

Yours sincerely

Information Requests

If you are unhappy with the response you have received in relation to your request for information and/or consider that your request was refused without a reason valid under the law, you may ask for an internal review. If you ask us for an internal review of our decision, it will be subject to an independent review within Ofcom.

The following outcomes are possible:

- the original decision is upheld; or
- the original decision is reversed or modified.

Timing

If you wish to exercise your right to an internal review **you should contact us within two months of the date of this letter**. There is no statutory deadline for responding to internal reviews and it will depend upon the complexity of the case. However, we aim to conclude all such reviews within 20 working days, and up to 40 working days in exceptional cases. We will keep you informed of the progress of any such review. If you wish to request an internal review, you should contact information.requests@ofcom.org.uk

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. Further information about this, and the internal review process can be found on the Information Commissioner's Office [here](#). Alternatively, the Information Commissioner can be contacted at:

Information Commissioner's Office
Wycliffe House
Water Lane
Wilmslow
Cheshire
SK9 5AF

Annex A

Regulation 12(5)(a) of the Environmental Information Regulations 2004

<p>The exception</p> <p><i>Regulation 12(5)(a) of the Environmental Information Regulations 2004 – a public authority may refuse to disclose information to the extent that its disclosure would adversely affect international relations, defence, national security or public safety.</i></p> <p>The regulation is engaged because disclosure of this information would adversely affect national security.</p> <p>The public interest test</p> <p>Regulation 12(5)(a) is subject to the public interest test.</p> <p>Key points:</p> <p>Ofcom can refuse to disclose information under this exception only if in all the circumstances of the case the public interest in maintaining the exception outweighs the public interest in disclosing the information. In assessing this, under regulation 12(2), Ofcom must also apply a presumption in favour of disclosure.</p> <p>In carrying out the public interest test, Ofcom should consider the arguments in favour of disclosing the information and those in favour of maintaining the exception, attaching the relative weight to each argument (for and against disclosure) to decide where the balance of public interest lies.</p> <p>We have set out the matters Ofcom have considered in reaching its decision with respect to the public interest below.</p>	
<p>Factors for disclosure</p>	<p>Factors for withholding</p>
<ul style="list-style-type: none"> <p>Transparency: There is always a general public interest in transparency. The EIR implements EU Directive 2003/4/EC on public access to environmental information. Recital 1 of the preamble to the Directive states this public interest:</p> <p><i>“Increased public access to environmental information and the dissemination of such information contribute to a greater awareness of environmental matters, a free exchange of views, more effective participation by the public in environmental decision-making and, eventually, to a better environment.”</i></p> 	<p>HM Government has advised Ofcom that:</p> <ul style="list-style-type: none"> <p>Disclosure of this type of information raises significant concerns on national security grounds and would adversely affect national security.</p> <p>Specifically, disclosure of this type of information would create an increased threat to the UK’s Critical National Infrastructure (CNI). CNI is those critical elements of infrastructure (including assets, facilities, systems, networks or processes), the loss or compromise of which could result in major detrimental impact on the confidentiality, integrity, and availability of networks, or delivery of essential services (including those of the emergency services).</p> <p>Government has strong concerns about publishing this type of information and has advised that publishing information on mobile sites constitutes a security risk.</p>

- **Accountability:** Mobile sites produce electromagnetic fields (EMF) or radio waves. At high enough levels, EMF can impact public health. As a result, the UK Health Security Agency (previously known as Public Health England (PHE)), an expert health body, [advises](#) that spectrum users should ensure that EMF levels comply with the internationally agreed levels in the [ICNIRP Guidelines](#). Some individuals may have concerns about the potential health effects of EMF and want to know the location of any mobile site in their local area and whether the EMF levels from such mobile sites comply with the levels in the ICNIRP Guidelines.
 - **Information already in the public domain:** Some local planning authorities have published information on the location of mobile sites (including on proposed sites). Information on mobile site locations is also available on some open source websites and mobile network operators' (MNOs) websites may indicate the general location of some masts (as well as future roll-out plans).
 - The location of mobile sites and other technical data is published in some other countries including in Ireland, France and Australia.²
1. **Espionage/sabotage:** Publishing this type of information could enable an attacker to remotely survey which mobile sites would be of interest from an espionage, sabotage or disruption perspective.
 2. **Jamming:** Publishing this type of information could enable the jamming of radio signals.
 3. **Physical security:** Information relating to hub sites (mobile sites that act as their own radio coverage site and also serve to 'daisy chain' other sites), switch sites, and data centres would be of particular concern from a national security perspective. The physical security of hub sites will become even more important as features such as Mobile Edge Computing become widely available.
 4. **Developments in emergency services communications:** In the future, knowledge of commercial networks could help enable an attacker to target the UK's emergency service communications network to a degree that knowledge would not have enabled in the past. This is due to the Emergency Services Network programme switching emergency service communication from the private Airwave network to a commercial network.
- Government has acknowledged that where detailed technical information is not requested, an attack is more difficult. However, site location provides the starting point for an attack to gain and build additional and more detailed information that may then make any subsequent attack more likely to succeed.
 - Government is also concerned that disclosure of information on mobile sites for the Swindon Wiltshire area would set a precedent for disclosure in response to requests about other geographic areas, resulting in further aggregation of information on mobile sites.

² <http://siteviewer.comreg.ie/#explore> (Ireland); <https://www.cartoradio.fr/index.html#/cartographie/stations> (France); https://web.acma.gov.au/pls/radcom/site_proximity.main_page/ (Australia).

	<ul style="list-style-type: none">• Current open source options are of much more limited use to a potential attacker than the data being requested - the data set being requested has the potential to be more damaging due to both its granularity and authoritative status. <p>Taking into account the factors in favour of disclosure, we have also taken into account the following:</p> <ul style="list-style-type: none">• Some of the publicly available data (such as local planning data) has not been updated for several years and is likely to be inaccurate and incomplete. Further, MNOs' websites only provide general location information and do not disclose specific site locations.• On accountability, we do not set EMF safety levels but we do carry out proactive testing of EMF levels near to mobile sites to check they comply with the internationally agreed levels in the ICNIRP Guidelines. Our website provides information on recent testing and measurements of EMF levels that we have taken near mobile sites. Our published measurements have consistently shown that EMF levels are well within the internationally agreed levels in the ICNIRP Guidelines. We also provide a service where individuals can request Ofcom to carry out EMF measurements near mobile sites.• There have been a significant number of attacks on mobile sites in recent years and publishing information on the location of sites risks further sites being attacked. Such attacks always have an adverse impact such as customers losing mobile signal and mobile operators incurring additional costs but they can have severe consequences, for example, where a mobile site that supports critical communications for the emergency services is attacked; the impact can be particularly serious in the current climate if there is disruption to a hospital's communications systems. Such attacks can also cause physical harm to employees of mobile operators, emergency services personnel and the general public.
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Reasons why public interest favours withholding information

- The greater likelihood of the adverse effect, the greater the public interest in maintaining the exception. This is affected by how extensive the adverse effect is – in this case the adverse effect on national security has the potential to affect the security of the United Kingdom and its people, and the opportunity for the adverse effect to arise is ongoing.
- The impact of the adverse effect on national security also has the potential to harm the United Kingdom and its people and is therefore severe.
- The open source information that provides similar data may present inaccurate, partial or out-of-date data, which makes them of much more limited use to a potential attacker. Using these open source information websites would not yield the same level of accuracy as would be contained in the information requested.
- Much of the other publicly available data does not disclose specific site locations or has not been updated for several years and is similarly likely to be inaccurate and incomplete.
- The security risk is also materially higher when all of the requested information is aggregated into a single user-friendly dataset, and published.
- We have carefully considered whether the arguments around transparency and accountability may outweigh the arguments in favour of withholding the information. In doing so, we have taken into account the national security risks identified above as well as (i) the fact all of our EMF measurements to date have shown that EMF levels are well within the internationally agreed levels in the ICNIRP Guidelines; and (ii) the high risk of attacks on mobile sites which can have significant adverse consequences.
- On balance, the arguments against disclosure – including the likelihood and severity of the adverse effect on national security, and the increased threat to national security in respect of the requested information when compared to the information already in the public domain - carry greater weight than the arguments in favour of disclosure. Therefore, the public interest in maintaining the exception outweighs the public interest in disclosure.

Regulation 12(5)(a) exception

I have delegated authority from the Ofcom Board to make decisions in relation to Ofcom's obligations under the Environmental Information Regulations 2004 (EIR).

Taking into account the advice from Government on the potential implications of disclosure, in my reasonable opinion, disclosure of the information requested would adversely affect national security. Regulation 12(5)(a) of the EIR therefore applies.

In applying this exception, I have balanced the public interest in withholding the information against the public interest in disclosing the information. I have set out above the factors I considered when deciding where the public interest lies.

I have decided that in all the circumstances of the case, the public interest in maintaining the exception outweighs the public interest in disclosing the information. In assessing this, I have applied a presumption in favour of disclosure.

Disclosure of the information requested is therefore refused under regulation 12(5)(a) of the EIR.

If you have any queries about this letter, please contact information.requests@ofcom.org.uk.

Signed:

Date: 27 November 2023

David Willis

Group Director, Spectrum