# Telecommunications and Digital Infrastructure Maps: Second Publication



## Foreword from the Minister for the Cabinet Office, Francis Maude and the Minister for Culture and the Digital Economy, Ed Vaizey





Last summer, the Prime Minister asked us to lead the Digital Task Force, which was set up to strengthen the UK's position as a world-leading digital economy. In February, we published an interim review of public sector telecommunications and digital infrastructure, taking yet another step towards our ambition for a government that is transparent and joined up. We said that we wanted to make full use of public sector telecommunications and digital capacity by avoiding wasteful duplication and putting available connectivity to use for the public good.

Public sector organisations have traditionally developed their own bespoke networks and technology, giving rise to duplication and under-utilisation. By working more closely across the public sector, we can deliver greater efficiencies, greater connectivity, and more effective business solutions. Where we've got public assets, we need to liberate them to be used for public benefit. We are starting to see real momentum, but there is still a great deal of work to do to maximise the potential in available infrastructure.

In considering opportunities to enhance connectivity and network sustainability, we have, in this publication, sought to show where it might be possible to harness not just government's owned networks, but also infrastructure owned and operated by others. In particular, this publication includes details of the superfast broadband infrastructure that has been upgraded with £1.7 billion of public funding, as well as the locations of onshore windfarms that have the potential to provide connectivity in remote rural areas.

A more efficient government and highly connected communities are central to the digital revolution. The more open we can be about the capacity that exists, the more we can make full use of it. We would like to thank the departments and other bodies involved in the production of these maps for their commitment to openness and collaboration. We want their work to inspire and encourage other network operators to commit to the same level of transparency.

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## Telecommunications and digital infrastructure map: overview



#### Introduction

This review builds on, and should be read alongside, the interim review of public sector telecommunications and digital infrastructure, which was published on 3 February 2015.

This can be found at:

www.gov.uk/government/publications/public-sectortelecommunications-and-digital-infrastructure-maps-interimpublication

The maps produced in the interim review are at Annex A.

This review has revealed further information about the infrastructure that government owns and leases, as well as where government enables access to connectivity provided by others.

- All central government departments connect to the Public Services Network (PSN) in whole or in part, either directly or via a legacy system. Almost all of the local authorities in the United Kingdom and 160 wider public bodies also buy connectivity through the PSN. As more and more networks migrate to the PSN, the possibilities for collaboration increase. The common framework drives competition and improves the services delivered.
- However, some central government departments and their agencies do not use the PSN for all of their networks. For example, the Home Office lease separate networks, to provide connectivity for their staff and for specific stand alone functions, and there is a wide area network used to connect staff in the Department for Environment, Food and Rural Affairs and agencies, such as the Animal and Plant Health Agency and Environment Agency.
- The Scottish Public Sector and Northern Ireland Executive both operate their own wide area networks to connect departments and offices across the country.
- The 2,200 miles of Scottish motorway and trunk roads use a mix of fibre, copper, wireless technology and third party providers for communications.

The Home Office is working to rationalise seven separate networks to run over one connection to the Public Services Network. The Home Office map shows the number of networks at given sites. Their current networks include an internal corporate network, connections to borders, HM Passport Office, the Disclosure and Barring Service, and police and security networks. Staff at borders also access the HM Revenue and Customs (HMRC) network. There is a pilot project underway at Heathrow to look at how access to HMRC applications can be achieved from the existing Home Office network enabling 700 surplus PCs and network equipment to be removed.

Government doesn't only own and lease networks for its own use. It also enables public and business access to a range of telecommunications and digital infrastructure. The owners and operators of this enabling infrastructure have a similar opportunity to see whether capacity on their networks could be harnessed for the benefit of the public.

In the hope of being able to facilitate and support wider commercial solutions, we are also publishing maps of:

- Government buildings, which could be made available as sites for mobile network operators to place masts and enhance connectivity. A model agreement and rate card for London have been agreed. We are now seeking to extend the principle of making government buildings available for apparatus related to fixed connectivity as well as considering over 10,000 government owned land sites. Organisations from the wider public sector may contact us to make use of government's standard lease terms and rate card. With interest from mobile network operators, this policy has real potential to extend and enhance connectivity.
- Superfast broadband infrastructure that has been upgraded though one of the largest telecommunications and digital infrastructure programmes in decades, with £1.7 billion of public funding managed by Broadband Delivery UK, the government's infrastructure delivery team responsible for bringing superfast broadband and better mobile connectivity to the nation.
- Onshore wind turbine locations, which, with commitment from owners and operators, have the potential to help provide connectivity in remote rural areas.

Government is exploring how it might be possible to facilitate sharing and the use of infrastructure for more than one purpose across industries in order to expand connectivity in hard to reach areas, and to promote network sustainability across the country.

#### **Facts and figures**

#### Specific networks

- · Over 3,500 points of access to the PSN
- 11,000 miles of fibre and copper run alongside the railways
- Around 2,000 miles of fibre and copper run alongside England's Strategic Road Network
- The Department of Work and Pensions receives over 200,000,000 external calls annually
- WiFi is available at 150 London Underground stations and at more than 50 Overground stations

#### **Devolved administrations**

- The growing Scottish Wide Area Network currently connects over 3,000 public service sites
- The Scottish motorway and trunk road network consists of 120 miles of fibre, 190 miles of copper, as well as wireless technology
- The Northern Ireland Civil Service and sponsored agencies has one of the largest internet telephony networks in Europe, with almost 25,000 users

#### Infrastructure enabled by government

- There are 533 onshore wind farms currently operational or under construction in the UK
- Public investment of £1.7 billion will help extend coverage of superfast broadband to 95% of UK premises by 2017
- Over 1,000 Government freehold buildings could be potential sites for connectivity infrastructure

#### **Public Services Network**

The Public Services Network joins ten different suppliers' UK networks together using a core spine, which creates the effect of a single network, connecting nearly six hundred public bodies. The points on the map represent where these bodies access the network.



#### **Department for Work and Pensions**

The Department for Work and Pensions uses a network which connects 950 sites including job centres and offices across the UK. The points on the map represent these sites.



#### **Home Office**

The Home Office is working to rationalise seven separate networks to run over one connection to the PSN. This map shows the number of networks currently at given sites. The darker the purple, the more networks are located at that site.



#### Department for the Environment, Food and Rural Affairs

The Department for Environment, Food and Rural Affairs wide area network is used to connect staff across the Department and its agencies. The points on the map represent their sites.



#### **Met Office**

The Met Office Remote Site Network provides access to critical weather data and products for the public and other organisations. It also provides connectivity for staff. This map shows the UK locations.



#### Echo

Echo is a global network for voice and data services used by the Foreign and Commonwealth Office, the Department for International Development, and the British Council. This map shows the UK part, representing 9% of the network.



### London Underground

London Underground operates a trackside fibre network with copper connections to provide mobile data, station radio, and an underground communications system. Points on the map denote stations, depots and head office locations.



#### **Scottish Wide Area Network**

The wide area network used to connect staff in the Scottish Public Sector. The map denotes network access points.



#### **Northern Ireland Executive**

The wide area network used to connect staff in the Northern Ireland Civil Service and sponsored agencies. The points on the map represent sites that access this network.



## The Scottish Government's motorway and trunk road communications infrastructure (Traffic Scotland)

The Scottish Government's motorway and trunk roads communications infrastructure (Traffic Scotland). The map denotes fibre and copper points of presence.

### **Government buildings**

This map shows the location of Central Government freehold buildings, which could be made available as sites for mobile phone masts.



#### **Broadband Delivery UK**

Broadband Delivery UK, part of the Department for Culture, Media and Sport, is responsible for delivering superfast broadband and better mobile connectivity to the nation. This map shows the location of superfast broadband infrastructure, which has been upgraded with its funding.



#### **Onshore windfarms**

This map shows the locations of onshore wind turbines, which are served by a range of connectivity solutions including fibre, copper and wireless.



# Annex A: Interim publication maps

#### Janet — Higher Education and Research

The UK Education and Research Network, commonly known as Janet (the Joint Academic Network) supports universities and colleges with a high bandwidth and scalable UK-wide network open to the Internet. Points of presence (PoP) are denoted on the map.



## **High Integrity Telecoms System**

Provides a high integrity system to carry information services between central government and local areas involved in a response to an emergency, utilising satellite technology. Core sites are denoted on the map.



## National Roads Telecommunications Services

The network is formed by fibre and copper cables in the verge of motorways and interconnects roadside devices such as CCTVs, speed cameras and signals. The network connects emergency telephones and other roadside devices to a number of regional control centres. Points on the map denote access to fibre optic and copper cables.



#### **Network Rail Telecoms**

Fibre in the ground supports safety-critical communications along railways, signalling and power control systems as well as Network Rail corporate voice and data traffic. Points on the map denote mast sites.



## Defence Fixed Telecommunications Service

Provides secure wide area network, voice, data and video telecommunications services via fibre, copper and radio connectivity in the UK and abroad. Different services provide connectivity to Ministry of Defence users, UK Industry, UK overseas Permanent Joint Overseas bases and partner nations. UK points of presence (PoP) are denoted on the map.



#### Health and social care

N3 is the private Wide Area IP Network for the UK National Health Service in England and Scotland. It provides connectivity at broadband rate or greater to national applications such as appointment bookings and electronic transmission of prescriptions to pharmacies. It also connects to other networks via Gateways, notably to the Internet. Points of presence (PoP) are denoted on the map.

