Department for Digital, Culture Media & Sport

5G Trials and Testbeds Programme

5G Network Deployment Pilots: Call for Views

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Department for Digital, Culture, Media and Sport

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Ministerial Foreword

5G is the next generation mobile standard that is set to transform communications. It's about more than just faster mobile services. Connectivity is now vital to modern life, and these transformations will impact how we do business and how we all live our lives. The UK is preparing to take early advantage of the new opportunities created by 5G, through the 5G Testbeds & Trials Programme, led from the Department of Digital, Culture, Media and Sport.

5G is the first generation of mobile technology designed to support multiple applications, from mobile broadband and entertainment services, to industrial applications such as robotics and logistics. It will impact almost all areas of life, from health and care, to transport, to agriculture, through to the provision of ultrafast wireless broadband connections. It will advance the convergence of fibre and wireless networks and help make connectivity of people and things ubiquitous.

5G will present new, potentially disruptive opportunities for the way in which services are delivered, and this Government is committed to ensuring that the UK remains at the forefront of this technological evolution. Fibre backhaul will be a crucial element in the introduction of 5G in order to match the bandwidth and latency offered by 5G radio.

Investment in 5G networks will be led by the private sector, but the business case is as yet uncertain and we know there is an important role for government to play in ensuring that the right conditions are in place to support timely investment. Deployment pilots will help to improve understanding of the economics of deployment in different environments and to identify any practical or regulatory challenges to deployment. Pilots have the potential to stimulate demand for new kinds of services and thus improve the business case for investment in 5G. Through this Call for Views we are seeking input on the approach we should consider for supporting network deployment pilots, including the scale and scope of those deployments.

This Government is working to create the right environment to support the development and deployment of 5G and this Call for Views is an important step towards making the case for investment, in order to support the UK's position as a world-leading digital economy.

Rt. Hon. Matt Hancock MP, Minister for Digital

Introduction

In March 2017, the Government published "Next Generation Mobile Technologies: A 5G Strategy for the UK"[1], which outlined the Government's aims to accelerate the deployment of 5G networks and to ensure that the UK can take early advantage of the applications those networks can enable; to maximise the productivity and efficiency benefits to the UK from 5G; and to create new opportunities for UK businesses at home and abroad, encouraging inward investment. An update to the Government's 5G Strategy is published today alongside this Call for Views. The 5G Testbeds and Trials Programme is a core element of this strategy.

5G Testbeds and Trials Programme

The Government has committed over £1 billion to support the next generation of digital infrastructure in the UK as part of the National Productivity Investment Fund including through the delivery of two programmes: the Local Full Fibre Networks ("LFFN") Programme and the 5G Testbeds and Trials Programme. These programmes aim to stimulate investment in next generation full fibre and wireless networks.

The two programmes are running from financial years 2017-18 until 2020-21. The Prospectus for the 5G Testbeds and Trials Programme was published in October 2017[2].

5G will deliver a range of technical capabilities, which should support three main use cases:

- **Enhanced Mobile Broadband** ("EMB") - this will enable the provision of high capacity entertainment services, including video streaming, virtual reality and augmented reality services. The 5G Testbeds and Trials Programme will stimulate the provision of additional coverage and capacity, including on road and rail networks

- **Massive Machine-Type Communications** ("MMTC") - this future "Internet of Things" will enable communication between millions of machines and devices, offering increased efficiency and productivity in sectors such as logistics, transport, agriculture, the built environment and energy. Through both the Phase 1 competition and these deployment pilots, the 5G Testbeds and Trials Programme aims to deliver urban and rural testbeds to encourage these sectors to invest in equipment which will drive machine to machine connectivity

- **Ultra-Reliable, Low Latency Communications** ("URLLC") - this will enable the provision of mission-critical and business-critical services and communications which are almost instantaneous, which could have transformative applications in manufacturing, remote surgery and traffic safety. This is also a key element of the 5G Testbeds and Trials Programme.

[1] https://www.gov.uk/government/publications/next-generation-mobile-technologies-a-5g-strategy-for-the-uk
[2] https://www.gov.uk/government/publications/5g-testbeds-trials-prospectus

By delivering projects that support the development of these use cases and associated infrastructure, the 5G Testbeds and Trials Programme will deliver the following objectives:

- to help to establish the conditions under which 5G can be deployed in a timely way to drive efficiency and productivity, and maximise the chances of the UK being amongst the leading 5G countries; and

- to foster the development of the UK's 5G ecosystem to ensure that the UK and UK businesses are well placed to maximise the efficiency and productivity benefits of 5G

This table summarises the Programme's activities to date.

Activity	**Summary**	**Award by (Provisional)**	**Deployment (Provisional)**
5GUK	£16m investment in developing 5G Test Network capability at the Universities of Surrey, Bristol and King's College London. This capability will be available as a national asset from April 2018 to support development of the 5G ecosystem	July 2017	July 2017-March 2018
Phase 1 competition	£25 million of grant funding awarded in a competition, funding 5G Testbeds and Trials. Focus on new and innovative uses of 5G technology, to drive investment and deployment of 5G and develop the 5G ecosystem	March 2018	April 2018-March 2019
Trans Pennine Initiative	£35m of funding for a joint project with the LFFN programme to deliver next generation track-to-train connectivity	Q1 2018	Q4 2018
Roads	£5 million for an initial trial, starting in 2018, to test 5G applications and deployment on roads	2018 onwards	Q4 2018
Security	£10 million to create facilities where the security of 5G networks can be tested and proven, working with the National Cyber Security Centre	2018 onwards	Q4 2018

Further Projects

We intend that the next phase of the Programme's activities will include funding for large, multi-year projects. The projects will be in those areas where there could be significant benefits to the UK and where our engagement has suggested that government action could have the greatest impact. In particular, we are considering launching:

- an urban deployment pilot which could provide a platform to test at scale a range of 5G "smart city" and IoT applications, such as those involving autonomous vehicles, traffic monitoring, health and care, public safety and security

- a rural deployment pilot which could provide the connectivity required for IoT services in sectors such as agriculture or health and care.

The Programme may also support additional testbeds and trials aimed at particular sectors such as manufacturing and health and care.

The Government's 5G Strategy highlights the fact that the business case for investment in 5G is not yet established. The objective of these deployment pilots would be to help to improve understanding of the economics of deployment in different environments, to identify and address any practical or regulatory challenges to deployment and to stimulate demand for new kinds of services that de-risk the business case for investment in 5G deployments.

Call for Views

Through this Call for Views we are seeking to understand how deployment pilots can:

- help to establish the conditions under which 5G can be deployed in a timely way

- help foster the development of the UK's 5G ecosystem to ensure that the UK, and UK businesses, are well placed to maximise the efficiency and productivity benefits of 5G.

We are seeking views on the appropriate scale and scope of deployment pilots in order to have impact, the timescales over which they should be delivered, the amount of public funding contribution which would be appropriate and the method by which funding should be allocated.

This Call for Views is aimed at those organisations who can contribute to the 5G value chain:

- Mobile Network Operators

- wireless infrastructure providers and other potential private sector neutral host providers such as fibre network providers or community network providers

- equipment manufacturers

- local bodies (including local authorities and Local Enterprise Partnerships) and Devolved Administrations who either a) may wish to offer their assets and/or b) may wish to cooperate through their digital infrastructure plan, by smoothing the way through planning and street works processes

- other stakeholders who may have innovative products, solutions or ideas to propose.

5G Network Deployment Pilots

We recognise the challenges faced by organisations seeking to invest in new network infrastructure. There is a continual drive to reduce costs whilst, at the same time, delivering greater capability. Fixed and wireless networks and services are converging. 5G will enable the Internet of Things of things to proliferate, greatly increasing the number of devices connected to networks. New technologies threaten to disrupt existing value chains.

Consultants Arthur D Little explore five distinct rollout models for 5G[3]:

1. To provide gigabit broadband to residential homes and an effective last-mile complement to fibre or cable networks[4] - this is sometimes referred to as **Fixed Wireless Access**.

2. To deliver a next-generation, nationwide mobile experience that enables new use cases driven by virtual reality, tactile internet, etc. This is sometimes known as **enhanced mobile broadban**d.

3. To deliver **highly reliable, low-latency connectivity** and solutions, improving both efficiency and productivity for corporate enterprise customers (including, potentially, Mobile Virtual Network Operators), utilising techniques such as network slicing to provide dedicated networks.

4. To enable **digital industrial ecosystems with machine-to-machine connectivity**, facilitating new service ecosystems with multiple partners, providers and end users. These could include smart city and smart healthcare ecosystems.

5. To deliver next-generation infrastructure-as-a-service. This is sometimes known as the **neutral host** model.

There are many factors which could act as barriers to investment in 5G technology. These include:

- practical challenges, such as the processes involved with planning and street works regulations; obtaining access to fibre backhaul and power; and the availability of devices

- uncertainties over the business case for investment in new technology, including unpredictable site acquisition costs and uncertainties over demand and revenue streams

[3] "5G deployment models are crystallizing", Arthur D, Little, June 2017

[4] This is currently more prevalent in the United States, but we expect there to be some demand for fixed wireless 5G connections in the UK.

- regulatory factors such as availability of spectrum and spectrum licence conditions; many of these issues are being addressed by Ofcom and through the Government's wider 5G strategy.

Our initial view is that a small number of larger scale deployment pilots in the UK would identify and help address practical and economic challenges relating to the deployment of next generation mobile networks. These could comprise one or more pilots focusing on deployment in an urban or suburban environment, and one or more pilots focusing on deployment in a rural area.

A crucial element of encouraging early investment in 5G will be to identify new revenue streams which can help to provide returns for investors. 5G networks will eventually enable new services to be provided in sectors such as health and social care, agri-tech, tourism and culture, manufacturing, transport, entertainment and utilities.

An urban pilot could provide a platform to test at scale a range of 5G "smart city" and IoT applications, such as those involving autonomous vehicles, traffic monitoring, health and care, public safety and security.

A rural digital connectivity pilot could explore ways to provide the connectivity required to deliver services in sectors such as agriculture or health and care.

There are huge potential benefits of 5G in the health and care sector and the UK is uniquely positioned to realise them, whether that's through providing additional coverage and capacity for remote care and diagnostics or delivering ultra-reliable low latency connectivity for wearable devices. We are working with stakeholders in this sector to establish how the 5G Testbeds and Trials Programme can support testbeds on which to trial new services.

5G technology can also be used to provide high capacity wireless broadband connections to the home. 5G has the potential to deliver seamless connectivity, so that consumers with wirelessly connected devices will be able to move easily between mobile and fixed networks.

As the identification of new services is crucial to making the business case for investment in 5G, it is important that these deployment pilots encompass use cases at scale.

Our initial proposal is to make available a total of c. £25-40m of capital funding for deployment pilots in urban/suburban areas and in rural areas. Funding could be available for pilots to start deployment in 2018/19 and complete by 2019/20 or potentially 2020/21.

Questions

Q.1 What should a deployment pilot most usefully cover and why in terms of:
(i) Geographic scale of coverage
(ii) Geographic type, including landscape topography and population density
(iii) Whether a single contiguous geographic or municipal area, multiple related areas or multiple independent areas is most appropriate?
(iv) Timescales over which deployment pilots are delivered?

Q.2 How should deployment pilots incorporate trials of 5G services or use cases? Which use cases would be most appropriate for a network deployment pilot?

Q.3 What role can the public sector play in relation to demand aggregation to support the trials?

Addressing Coverage Challenges through Infrastructure Sharing

Many of the new services that will eventually utilise 5G networks, such as those relating to transport, health and social care or entertainment, are likely to rely on widespread coverage. Without intervention, 5G networks could be slower to arrive in rural areas than in areas of high population density and therefore there is a danger that the eventual coverage footprint could leave the same not-spots and partial not-spots as exist today. The business case for investment is also challenging in urban areas, where the need for cell densification increases overall capital expenditure and the challenges around planning and site acquisition are multiplied.

One way of reducing the cost of deployment is through infrastructure sharing. Mobile Network Operators already share network infrastructure - EE and Three through their joint venture company, MBNL, and Vodafone and O2 through their joint venture, CTIL - and share mast sites via independent infrastructure companies such as Arqiva, WIG and Crown Castle.

“Neutral host” shared infrastructure is likely to become more prominent with the advent of small cells and 5G. Private or public sector owned common infrastructure could negate the need for multiple small cell networks in towns and cities. Neutral host infrastructure could be owned by:

- network operators wishing to co-invest to share the risk
- independent wireless infrastructure providers
- fibre network providers who may choose to diversify into the provision of sites for small cells
- local authorities who wish to utilise their assets such as street lights and ducts.

Infrastructure sharing can take many forms - sharing of passive elements such as masts, to active elements such as antennas and baseband units. Even spectrum resources can be pooled or shared in other ways, such as through roaming, network slicing or other forms of wholesale access.

Neutral host infrastructure could be deployed at national scale or on a regional or municipal basis. We are looking for innovative ideas for commercial models involving neutral host infrastructure, from the public or private sector, or collaborations involving both that we could test through deployment pilots.

Q.4 How could a deployment pilot help to prove the business case for commercial investment through models which go beyond the current infrastructure sharing

arrangements? For example, could deployment pilots involve private sector sharing, neutral host provision by the public or private sector, or public/private partnerships?

Q.5 What forms of passive and active infrastructure sharing could usefully be explored through deployment pilots?

Q.6 Should the 5G Testbeds and Trials Programme undertake a network deployment pilot focused on the technologies and deployment methods required economically to deliver coverage, with necessary capacity, to remote and hard to reach locations?

Addressing Deployment Challenges Relating to Planning and Street Works

A key lesson from 4G rollout in the UK is that there are a number of barriers that are specific to the UK that can raise the costs of the deployment and operation of mobile networks. Network deployment pilots could include seeking to identify and help address the regulatory, planning, building control, permitting and other issues that are specific to the UK as well as providing the opportunity to pilot deployments in built environments in the UK.

In respect of the planning system, the Government has been working with industry to assess whether further changes could be needed in order to meet the challenges of 5G deployment. DCMS has also set up a cross-government Barrier Busting Task Force (BBTF) and the 5G Testbeds and Trials Programme will be working in parallel with these activities to identify and resolve practical barriers to deployment. In particular, the BBTF is exploring both short and longer term solutions, including best practice and guidance in areas such as wayleaves and street works, in order to provide more certainty and lower the cost of deployment.

Deployment pilots could be used:

- to explore ways of deploying small cell networks at scale
- to look at innovation in the design of 5G network equipment and associated street furniture that could minimise the impact on the built environment
- to establish best practice in permission for street works, for example in terms of civil works for the installation of fibre infrastructure and power or road closures associated with installing or accessing street furniture
- to explore local authority schemes to speed up planning and street works approvals, testing solutions identified by the BBTF.

Q.7 How could network deployment pilots be designed to:

(i) identify and address barriers to deployment relating to planning and process requirements?

(ii) include the provision of public sector assets such as buildings, street furniture and ducts for the deployment of fibre, radio cells and other network equipment?

(iii) develop innovative approaches to the granting of wayleaves and site leases?

(iv) explore how landowners and developers can work in partnership with network providers?

(v) explore how innovation and best practice in the design of hardware and other network elements could minimise the impact of network infrastructure on the built environment?

Q.8 What other areas should the Barrier Busting Task Force be looking at?

Collaboration with the Local Full Fibre Networks Programme

The 5G Testbeds and Trials Programme and the LFFN Programme are closely related and share a funding allocation. Areas of common interest include fixed wireless access as a method of high speed broadband delivery and access to fibre backhaul for wireless network operators. As noted elsewhere in this document, fibre connections will be a significant component of 5G networks and the inability to obtain access to fibre could act as a barrier to investment. A municipal neutral host model could potentially be explored through a jointly funded project.

Q.9 What opportunities are there for the LFFN Programme and the 5G Testbeds and Trials Programme jointly to fund one or more deployment pilots?

5G Frequency Bands

In order to address the wide range of 5G use cases and service requirements, networks will have to utilise a range of different spectrum bands with different characteristics:

- lower frequency spectrum to provide the “coverage layer” - wide area and deep-indoor coverage

- medium frequency spectrum with the potential for wider bandwidths, which can provide a good compromise between capacity and coverage

- very high frequency spectrum, to provide the super-capacity data layer, for services requiring extremely high data rates.

New frequency bands have been identified for 5G and Ofcom is working to make these available to the market:

- Ofcom has published its decision on the rules for the auction of spectrum in the 2.3 and 3.4 GHz bands[5].

- Ofcom have said that they are minded to deliver a future combined award in 2019 of:
    - the remaining 116 MHz being made available in the 3.6GHz to 3.8GHz band; and
    - the 700 MHz spectrum which is expected to become available by mid-2020[6].

- Ofcom plan to bring forward a consultation on enabling further sharing in the 3.8 GHz to 4.2 GHz band in 2018, with a view to enabling innovative uses. Ofcom's initial view is that in any future framework all existing and new users of the band (including current satellite users) would be authorised on the basis of first-come, first-served coordination mechanisms, as is the case in the band now. Under this approach existing licences and grants would remain in place.

- Ofcom has also called for input from stakeholders in order to inform its work to make spectrum in the 26 GHz band available for 5G wireless networks[7]. In the same document, Ofcom outlines its views on other millimetre wave bands and sets out its intention to commence work on the 66-71 GHz band.

- Ofcom has also made clear that it is willing, in principle, to make spectrum available to enable testing, development, research or demonstration of radio equipment, upon request. Ofcom has a licensing process in place to support applicants seeking frequencies for trials.

The use of higher frequencies which do not propagate as far as the lower frequency spectrum will necessitate the deployment of a greater number of smaller radio antennas (known as "small cells") than seen in earlier generation mobile networks.

In the 5G Strategy, published at Spring Budget 2017, the Government asked Ofcom to provide a report on the scope for the spectrum licensing regime to facilitate better 4G and 5G deployment at national, regional and local scales, including in-building usage. Ofcom has now published this report, which sets how Ofcom will use its regulatory powers to support the potential for new services and innovative uses and users of spectrum. This will include considering further sharing in already assigned bands and the potential for an innovative licensing regime for millimetre wave spectrum that takes into account the particular challenges and opportunities offered by such high-capacity, short-range connectivity. The Government will give full consideration to the report.

Q.10 Should deployment pilots focus on any particular frequency bands? If so, what would the likely bandwidth requirements be?

[5] https://www.ofcom.org.uk/__data/assets/pdf_file/0022/103819/Statement-Award-of-the-2.3-and-3.4-GHz-spectrum-bands-Competition-issues-and-auction-regulations.pdf
[6] https://www.ofcom.org.uk/__data/assets/pdf_file/0017/103355/3-6-3-8ghz-statement.pdf
[7] https://www.ofcom.org.uk/__data/assets/pdf_file/0014/104702/5G-spectrum-access-at-26-GHz.pdf

Q.11 Are deployment pilots likely to involve the use of fixed term non-operational spectrum licences? If so, how could the long term sustainability of the deployment be ensured?

Evolving Network Architecture

The architecture of communications networks is evolving. Achieving peak rates and capacity in 5G networks will require new approaches to cell infrastructure, network planning and backhaul. According to the European Commission's 5G Public Private Partnership ("5GPPP") in order to achieve the expected capacity, coverage, reliability, latency and improvements in energy consumption, 5G network architecture is expected to run over a converged optical-wireless-satellite infrastructure for network access, backhauling and front-hauling[8].

5G networks will build on LTE network architecture with the introduction of Cloud RANs ("C-RANs") and Virtualised RANs. Network function virtualization (NFV) and software-defined networking (SDN) tools and architectures could enable operators to reduce network costs and simplify deployment. Sufficient computing power will need to be put in place to process much greater volumes of data. The need to maintain low latency will mean applications running at the edge of the network, through the utilisation of edge computing.

Network slicing will enable operators to provide distinct functional layers for different services or service types, over shared physical resources. This is a cost-efficient way of delivering differentiated service levels to different groups of customers. However, network slicing involves complexity in the end to end path, requiring the slice to be implemented in the radio access network, in the transport (backhaul) and in the core. This end-to-end path will involve multiple domains and possibly multiple operators and will therefore require interfacing and interoperability throughout.

C-RANs offer the potential to reduce cell site costs related to civil works, lease fees, power consumption and maintenance. However, this needs to be balanced against the requirement not only for backhaul but also for high capacity front-haul connections, as baseband units move further back into the network and remote radio heads move towards the edge[9].

These transmission links will need to be really fast in order to synchronize the transmissions across the network and are therefore likely to have to be delivered over fibre. This could present challenges in areas currently unserved by fibre networks, both in terms of time to deploy and cost to deploy. Moreover, every cell site will require access to power.

[8] https://5g-ppp.eu/wp-content/uploads/2015/02/5G-Vision-Brochure-v1.pdf

[9] Fronthaul is a point-to-point connection between a centralised baseband unit and a remote, stand-alone radio head at the cell site.

With fibre being a critical element of 5G networks, another key challenge is the need to reduce the civil engineering costs. This could be addressed through innovation in civil engineering, for example through the use of robotics.

Q.12 How could network deployment pilots address challenges relating to:

- ***access to fibre for 5G networks;***
- ***interoperability of new 5G networks and services?***

Q.13 What innovative approaches could usefully be explored through a network deployment pilot to:

- ***civil engineering;***
- ***the supply of power to cell sites;***
- ***more energy efficient technology?***

Q.14 Could deployment pilots help reduce the commercial risk around 5G by enabling experimentation with cell density?

Approach to Public Funding

Our initial proposal is to make available a total of £25-40m of capital funding for deployment pilots in urban/suburban areas and in rural areas, and we will expect significant match funding from partners. Funding could be available for pilots to start deployment in 2018/19 and complete by 2019/20 or potentially 2020/21. Government intervention should not have the effect of distorting competition in the market such that it is an unlawful State aid under EU law.

Q.15 What is an appropriate amount and timescales for public funding contribution?

Q.16 Given that public funding may be applied to capital expenditure only, how can the ongoing operational costs of deployments be managed?

Q.17 What additional investment and/or contribution-in-kind could private sector organisations make towards 5G network deployment pilots?

Q.18 What sources and approaches to funding should be considered, for example, grant funding, joint venture arrangements, anchor tenants, demand vouchers etc. that could be tested in a network deployment pilot. Would any of these be more appropriate for an urban/suburban or rural network deployment pilot?

Involvement of Local Bodies and Devolved Administrations

Local bodies and Devolved Administrations have an important role to play in encouraging and enabling the rollout of communications networks. The Government believes that local bodies could play a proactive role in making mobile deployment easier through coordinated digital connectivity plans. This will be increasingly critical as the UK moves from 4G to 5G, due to the need to deploy infrastructure on a scale not previously seen.

In order to highlight such examples of best practice, we have created a Local Connectivity Group, made up of local areas, government departments, landowners and industry. The Group will help to provide an accurate picture of local area requirements for the deployment of digital infrastructure, encourage local areas to develop local plans for digital connectivity and could limit inconsistencies in interpreting regulations across the country. As part of this work the Government wants to work with city region mayors.

In terms of the contribution from local bodies, we are looking for a collaborative approach. Best practice is likely to be demonstrated by those local authorities who recognise the economic benefits of connectivity for their area and its residents and businesses, and do not simply seek to generate revenue from the use of their assets. For example, local bodies might accept alternative forms of consideration from network providers for wayleaves and site leases, such as the provision of assets in return for services or data for data analytics. Or they might propose a plan for the use of assets for multiple purposes, such as small cells, street cameras and car charging.

Where a network deployment pilot supports and enables local activities such as in a smart city trials project, we would expect local authorities to be involved as key partners in the project. The action that Aberdeen City Council have taken to help launch a 5G-ready small cell network connected by fibre in the city is one example of good practice in this area. Aberdeen City Council shaped their concession to attract long term investment in connectivity that would benefit the local economy. At the same time they have provided resources to develop efficient processes for accessing street furniture and ducts.

The 5G Testbeds & Trials programme is UK-wide. We are keen to see a strong presence from industry and local authorities across the whole of the UK.

We note that there are already activities across the United Kingdom working to address challenges around mobile network coverage, for example as set out in the Digital Strategy for Scotland[10].

[10] Realising Scotland's full potential in a digital world: A Digital Strategy for Scotland http://www.gov.scot/Publications/2017/03/7843

Q. 19 What is the level of interest and potential roles for local bodies in encouraging and assisting network deployment pilots?

Q. 20 What additional investment and/or contribution-in-kind could local bodies make towards 5G network deployment pilots?

Approach to selection of pilots

There are at least two groups of parties who should be involved in a network deployment pilot:

- organisations that will undertake the deployment activities and then operate the networks. We expect that these will typically be private sector organisations; and
- organisations responsible for the local area in which the pilot is being deployed and which can help to generate demand for the networks through services. We expect that these will typically be public sector organisations.

We will need to consider the best approach to the selection of pilots for any contribution of public funding within the State aid structure, and this will depend on the funding approach and the nature of commercial arrangements.

For example, for a grant funding approach, options for selection include:

- Inviting consortia comprised of both the groups of parties outlined above, and to submit an application in response to a funding competition;
- Running a process to identify and select consortia of organisations for the deployment and operation of networks, whilst in parallel identifying local bodies who are most keen to host deployment pilots; then matching appropriate groups of organisations together.

Q.21 What is the most effective approach to selecting organisations who will deploy and/or operate, and who will host network deployment pilots?

How to Respond

Responses to this Call for Views must be submitted by Wednesday 24th January 2018. Please limit your responses to 10 pages, with supporting data and analysis in an annex. Please send your response to 5Genquiries@culture.gov.uk. Responses or material sent to any other email addresses will not be taken into consideration.

If you cannot reply via email, please respond by post to:

5G Network Deployment Pilots Call for Views
5G Testbeds and Trials Programme
Department for Digital, Culture, Media & Sport
100 Parliament Street
London
SW1A 2BQ

When responding, please state whether you are responding as an individual or as a member of an organisation. If the latter, please state the organisation on whose behalf you are responding. If responding on behalf of a larger member organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

This Call for Views is a written exercise. It is available in text format on the Department's website: www.culture.gov.uk. Should you require access to this Call for Views in another format (e.g. Braille, large font or audio) please contact us on 020 7211 6000 or 5Genquiries@culture.gov.uk.

Information provided in response to this Call for Views, including personal information, may be published or disclosed in accordance with access to information regimes, primarily the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 1998 (DPA).

If you would want the information that you provide to be treated confidentially, please be aware that, in accordance with the FOIA, public authorities are required to comply with a statutory code of practice which deals, amongst other things, with obligations of confidence. In view of this, it would be helpful if you could explain to us why you wish that information to be treated confidentially. If we receive a request for disclosure of that information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances.

The Department for Digital, Culture, Media and Sport will process your personal data in accordance with the DPA and, in the majority of circumstances, this will mean that your personal data will not be disclosed to third parties.

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