

Response to Department for Digital, Culture, Media and
Sport:
5G Trials and Testbeds Programme
5G Network Deployment Pilots:
Call for Views



January 2018

Broadband Stakeholder Group

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The Broadband Stakeholder Group (BSG) is the UK government's leading advisory group on broadband. It provides a neutral forum for organisations across the converging broadband value-chain to discuss and resolve key policy, regulatory and commercial issues, with the ultimate aim of helping to create a strong and competitive UK knowledge economy.

The government's ambition to be a global leader in both 5G deployment and the potential new services and products that this next general of technology will enable is a vision that is warmly welcomed by the BSG. The UK's 5G strategy is intrinsically tied up with the Future Telecoms Infrastructure review, currently also under consultation, and any policy interventions to promote the distribution of fibre will therefore be equally favourable from a 5G perspective.

Getting the conditions right for 5G deployment is key, and the government's stated intention to address the practical or regulatory challenges will be crucial. As such we welcome the objectives of the 5G Trials and Testbeds Programme and the creation of a more favourable regulatory and policy environment may well go some way towards motivating the not insubstantial investment and associated costs that building a new infrastructure will entail.

To this end the BSG intends to undertake a further report that will look into the practical issues surrounding 5G roll out and what the deployment will actually mean and identify the potential for problems before they become actual barriers to making the UK 5G ready. Whilst this report will not focus on commercial concerns and business cases the intention is that by determining where the potential for problems might lie, obstacles can be removed before they become disincentives. To this end the BSG has not fully addressed questions on future revenue streams although we fully recognise the importance of these new streams to generate a positive business case for investment.

The Broadband Stakeholder Group (BSG) welcomes the opportunity to respond to the 5G Trials and Testbeds Programme Network Deployment Pilots: Call for Views.

Q1: 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?**

(iii) The BSG identified several barriers hindering the deployment of telecoms infrastructure across the UK¹ and made a series of practical recommendations that could be taken to help facilitate and speed-up the roll out of broadband. We would hope that following on from this report, and the creation of the Barrier Busting Taskforce (BBTF), that these barriers may be lessened or removed entirely so that the deployment of both full fibre and 5G infrastructure can be expedited. We would expect that many of the disincentives to investment towards fixed infrastructure roll out could equally serve as impediments regarding 5G and the small cell densification that it likely necessitates.

A key concern facing the industry is inconsistencies across approaches taken by different local authorities and boroughs. A deployment pilot which crosses boroughs and highlights the issues of differing approaches taken by different local authorities and how this might play out, and to what effect, at a national level could therefore provide extra benefit.

Q2: How should deployment pilots incorporate trials of 5G services or use cases? Which use cases would be most appropriate for a network deployment pilot?

The BSG represents the whole value broadband chain and has always sought to reflect the views of both the supply and demand for networks. In light of this, the BSG welcomes the Government's recognition of the potential of pilots to stimulate demand and improve the business case for investment in 5G. The economic and social utility of 5G depends upon it being widely used as well as deployed. In determining which demand stimulation measures to support, Government should prioritise use cases which resonate with the public, build on the UK's comparative strengths, and where interventions would be both timely and offer substantial wider benefits to UK consumers and citizens.

5G presents opportunities to a large number of sectors, and BSG members believe that the broadcasting sector is one of these. IP delivery of content, including 5G delivery, could do broadcasting better, for example by enabling services like more personalised radio and television, and rich, interactive AR/VR experiences. They could help support new business models such as more targeted advertising and more effective use of user data. At the same time, broadcasters could also offer opportunities for the UK to do 5G better, making investment go further and faster.

¹ <http://www.broadbanduk.org/2017/05/23/tackling-barriers-to-telecoms-infrastructure-deployment-issues-and-recommendations/>

Q3: What role can the public sector play in relation to demand aggregation to support the trials?

The BSG believes that demand side interventions have been a relatively neglected tool in the UK policy environment when compared to supply side interventions. The Local Full Fibre Network (LFFN) Programme has a number of demand side interventions which are aimed at incentivising additional network build. It is important that the 5G pilots also examines the role of demand aggregation, in particular public sector aggregation which is directly within its remit. As part of this approach it is important that the public sector considers approaches more akin to partnerships and alliances rather than traditional procurer/seller models.

Q4: 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?

The BSG welcomes the focus that the Government has placed on the neutral host model and infrastructure sharing more generally. Establishing a business case for 5G remains nebulous for both mobile network operators and infrastructure builders given the high initial investment cost required and considerable uncertainty inherent in the rollout of 5G. The NIC 5G Cost Coverage and Rollout report² sets out 9 hypothetical scenarios, looking at ranging speeds and network sharing as well as infrastructure competition. It concluded that the cost of infrastructure deployment is most sensitive to the degree of infrastructure sharing taking place. With this in mind, and given the reticence inherently associated with large capital investments and hitherto unknown and therefore risky returns, pilots that might successfully demonstrate how to enable 5G roll out at a lower cost and with lower risks would be optimal.

The pilots will naturally need to generate new understanding than that which is already established in the sector. In September 2017, Wireless Infrastructure Group (WIG) partnered with O2 and launched the UK's first fibre-connected small cell network in Aberdeen³. This new wireless infrastructure not only enables advanced 4G services to be run at present, but WIG's infrastructure is in place and ready for the launch of 5G technology. Whilst O2's partnership with WIG enabled it to play a key role in the development of the infrastructure, it has been built so as to support all mobile operators and other wireless networks. The success of this project is attributable not only to Aberdeen City Council's engagement throughout the project, from planning to inception, but the collaboration between both infrastructure and mobile network operator.

For pilots and trials to efficiently deliver quicker results and therefore greater benefit, a logical methodology would be to take such examples of best practice and extend and build on their capabilities and success.

² <https://www.nic.org.uk/publications/exploring-cost-coverage-rollout-implications-5g-britain-oughton-frias-report-nic/>

³ <http://www.wirelessinfrastructure.co.uk/city-of-aberdeen-paves-the-way-for-5g/>

Q6: 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?

Fixed wireless access is one of the immediate use cases for 5G, particularly given the deployment of technology in likely 5G bands in the USA⁴. It should also be noted the role that Fixed Wireless played in DCMS' Market Test Pilots⁵. It is therefore important that any testbed seeks to increase learning that isn't already available from these and other deployments.

Q7: 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?**

This list demonstrates the challenges that operators are faced with in deploying fixed and mobile infrastructure today. It is therefore important that any changes as a result of these pilots are applied widely rather than focus explicitly on 5G.

Q8: What other areas should the Barrier Busting Task Force be looking at?

If, in order to meet differing use cases, 5G networks result in the sorts of densification that is currently being discussed – a magnitude above the sites that are currently deployed – then the sheer scale of deployment may well throw up challenges which we have not encountered in previous network deployments.

The BSG are currently in the process of commissioning a project to help identify future challenges, regulatory, planning and practical, which the small cell environment may yield and

⁴ <http://www.verizon.com/about/news/future-wireless-has-arrived>

⁵ <https://www.gov.uk/government/news/broadband-pilot-schemes-driving-competition-for-superfast-rollout-contracts>

whether the extent of cell densification might pose a scenario where new barriers are created and examining potential implications of using very high spectrum frequencies in urban areas.

Another aspect that needs to be considered is the overall incentive regime around investment. As discussed above this includes the ongoing Future Telecoms Infrastructure Review but also includes issues such as the business rates regime.

Q9: What opportunities are there for the LFFN Programme and the 5G Testbeds and Trials Programme jointly to fund one or more deployment pilots?

Fibre is a fundamental enabler of a large scale 5G network, whilst 5G itself is a potential revenue stream for fibre networks. The BSG believes therefore that there could be significant benefits to joint pilots between the LFFN and 5G Programmes.

Q16: Given that public funding may be applied to capital expenditure only, how can the ongoing operational costs of deployments be managed?

The Programme should consider innovative solutions to how to manage operational costs. This could include the use of funds to purchase rather than rent land and assets. However, the overall approach of the pilots should be how to lower the cost of both capital and operational expenditure.

Q21: What is the most effective approach to selecting organisations who will deploy and/or operate, and who will host network deployment pilots?

In general, the BSG believes that depending on the outcome of the trial the organisation which either adds most to our collective learning or that which commits to invest more in digital infrastructure should be prioritised.

For further information please contact:

Sarah Shepherd
Broadband Stakeholder Group
sarah.shepherd@broadbanduk.org