Neutral Wireless

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Response to UK Govt DCMS consultation on:

Statement of Strategic Priorities for telecommunications, the management of radio spectrum and postal services

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1. Introduction

Neutral Wireless Ltd is an SME which seeks to use new technologies and business models to bring better coverage to people, particularly in areas where the traditional market players have not been able to justify business cases. We are strong believers in the use of **shared and Dynamic Spectrum Access (DSA)** as routes to gain access to spectrum. We believe strongly that dynamic, automated control of access to spectrum represents the most effective way to maximize spectrum utilisation and, ultimately, has the potential to result in the best use of spectrum for the benefit of people and businesses in hard-to-reach communities where spectrum is often under-utilized. Standards-compliant LTE using DSA has been deployed for demonstration via the **DCMS-funded 5G RuralFirst** project, and this technology is ready for use today.

We also believe that 5G presents an opportunity to explore **new ways of doing things**, and that it should be more than simply an extension of 4G or 3G or 2G. We include within this view innovative business models incorporating concepts such as **neutral hosting** and **national roaming**, as well as innovative ways of **sharing of spectrum** for the benefit of the people and businesses of the UK. Furthermore, we believe that 5G technologies need not be limited to providing traditional mobile connectivity; they could be used in other applications such as **Fixed Wireless Access (FWA)**, **private LTE/5G networks**, etc. All of this requires **new thinking** and **new approaches**.

These views are closely aligned with DCMS's Statement of Strategic Priorities (SSP) and its Future Telecoms Infrastructure Review (FTIR). There exists a clear opportunity to deliver on several of these aspirations through an **ambitious and innovative** approach in the upcoming spectrum awards and in telecommunications regulatory policy in general.

2. Response to Consultation Questions

Question 1 – Do you agree with the Government's strategic priorities and desired policy outcomes for telecommunications, the management of radio spectrum and postal services?

The Government's ambitions and aspirations are to be applauded, and we welcome measures that are designed to remove or reduce barriers to deployment and to encourage alternative network operators in areas that are under-served by traditional network operators.

Our activities fall mainly in connection with **Section 1: World-Class Digital Infrastructure**, and it is our view that 'new thinking' and 'new approaches' will be required if the Government's ambitions are to be reached in this regard. In particular, we believe that new business models will need to be encouraged – open business models featuring **neutral hosting** deployments and **'not-spot' roaming**, both of which could be helpful and beneficial for consumers and communities, and also for mainstream Mobile Network Operators (MNOs) if deployed in the right way.

We also believe that **flexible licensing of spectrum** will be crucial to the achievement of the Government's ambitions. Use of spectrum by MNOs in rural areas is highly inefficient at present, and many parts of the UK are likely to remain insufficiently connected for many years unless affordable access to spectrum is made possible in locations where the main MNOs are not deploying. Ofcom's current proposals to allow shared access are welcome,

but we firmly believe that this can be more effectively and more efficiently implemented via automated **Dynamic Spectrum Access (DSA)**. The technologies exist today, and the approach can, if deemed necessary, be implemented using an **'outside in'** approach starting with rural locations in the first instance, where the results are likely to be most beneficial.

Furthermore, we believe that in order to maximize spectrum utilization more generally, DSA should be applied not only to the bands that Ofcom refers to as 'shared bands' but also to the 700 MHz and 3.4-3.8 GHz bands, as this would allow Ofcom considerable flexibility in controlling access to spectrum in different scenarios, and it could be implemented in stages, starting with relatively simple models for rural areas in the immediate term, followed by more refined models in due course. Noting the recent process announcement by the German regulator (*Bundesnetzagentur)* that industry will be able to apply for 100MHz bands of spectrum in the 3.7 to 3.8 GHz band, we believe that if the UK adopted similar plans, this would provide UK industry with the opportunity to embrace **private LTE/5G networks** and deploy **industrial IoT** at cost-effective scale, and would help to ensure competitiveness in vertical markets.

On spectrum sharing, we are also in agreement and are supportive of licensing arrangements that would release further public, MoD, or other unused spectrum. Strategies such as **CBRS (Citizen Broadband Radio Service)** in the USA, with **incumbent, priority access, and general access** levels, are worthy of review and consideration for the UK. Our team also has extensive background working on **TV White Space (TVWS)** in the 470MHz to 790MHz range, and we are of the opinion that there is significant and renewed opportunity here with the availability of flexible and low-cost software defined radio (SDR) implementations and RF sampling technology. In particular, the award of 'priority' licences in certain TVWS bands in a CBRS style could allow **fixed and mobile services** to be deployed in rural or other areas using both Software Defined Radio (SDR) and cost-effective, widely-available mobile basestations and user equipment from other international regions that use, for example, the 600 MHz bands.

One of the key factors in delivering better connectivity in rural areas is the **availability of spectrum** that is aligned with **currently deployed handsets** which are in use by people today. By making available, on a shared basis, spectrum that is already supported by widely-available mobile handsets today, **coverage can be improved more rapidly** than if every user were to need a new phone to support a dedicated shared spectrum band, or if new bands needed to be standardised for handsets 18 to 24 months down the line. Therefore, if DCMS wishes to see a real, **tangible improvement in coverage** for consumers, it is important that this spectrum is **ready to use** with existing mobile phones today.

We agree in particular with the recommendation that Ofcom look towards options traditionally seen by the industry as more extreme, such as **national roaming** and **neutral hosting**. To consumers, an area is a not-spot if they are unable to receive a signal on the network that **they** use. To regulators, an area is a not-spot only when it is not covered by **any of the networks**. Many people in rural areas live in an area well-served by one network, but work in an area best served by another network. It is also important to consider the **quality of connection** (i.e. speeds, latency, reliability).

For **neutral hosting** to be **successful**, we believe that DCMS must set out **expectations** of Ofcom by way of an SSP or similar instrument, to monitor and ensure that an **effective, fair, and competitive market** for neutral hosting provision emerges, with **equal access for third parties** to provide their services. Without this, larger established players may be able to negotiate commercial deals with MNOs to make it **harder for smaller market entrants,**

keen to deploy in some of the most rural areas, from gaining access and providing service to MNO customers.

With regard to Section 3: "Secure and Resilient Telecoms Infrastructure", we would emphasise the importance of this task. We **commend** DCMS for highlighting it in this statement of strategic priorities, and highlight here the **importance** of ensuring that the **security of the UK's telecommunications infrastructure** is worked on, **both technically and organisationally**. Recent high-profile press has made **MNO plans for 5G** networks become **headline mainstream news**, and of public interest. We believe that DCMS should carefully consider how it can direct Ofcom to **effectively oversee** the roll-out of 5G networks, and ensure that UK mobile infrastructure remains **secure** against the advanced and highly capable **nation-state level attacks** which are experienced **routinely** by critical infrastructure operators in all nations. This specifically includes the security of external, vendor-supplied equipment.

Question 2 – Does this document set out clearly the role of Ofcom in contributing to the Government's strategic priorities and desired outcomes?

The Consultation Document sets out expectations of Ofcom, and clearly explains the legislative framework that has been newly introduced and which will govern Ofcom's role. However, it's not completely clear how Ofcom's activities will be assessed and judged in terms of the extent to which they are aligned with, and contribute to, the Government's strategic priorities and desired outcomes. We note, from having read Ofcom's recent consultation documents, that their current UK coverage targets are less ambitious than those presented in this SSP.

We also suggest that there might be an opportunity here for Ofcom to play a more proactive role in 'championing' 5G, actively promoting it in a manner akin to the approach followed by the US's FCC, as opposed to being more of a 'passive policeman'. If we want the UK to secure a lead on 5G, we believe that a proactive champion, in both a national and an international context, will be required.

Overall, we are supportive of the Government's endeavours here, and we are of the view that they are a significant step in the right direction.

3. Summary

All of these goals will require **'new thinking'** to be adopted amongst industry-players, regulators, Government, etc., and we are supportive of the Government's activities in defining strategic priorities to which Ofcom must have regard. We hope that Ofcom will engage positively with this process.

We emphasise the importance of taking steps promptly to increase access to spectrum for new market entrants in mobile communications, since the current market-led approach to **spectrum access** has consistently **failed to deliver** service to rural communities across the country. Neutral hosting and national roaming present potential solutions, and these form part of the '**new thinking**' that the UK needs to embrace. **New market entrants** in mobile communications will stimulate new application markets, provide opportunities for international growth and expansion, and improve both coverage and service quality.

The cyber-security threat to telecommunications infrastructure remains significant, and again 'new thinking' is required to ensure that choices made in the roll-out of 4G and 5G do not reduce security for the sake of cost savings.