

By email: spectrumsharing@ofcom.org.uk

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Dear Sir

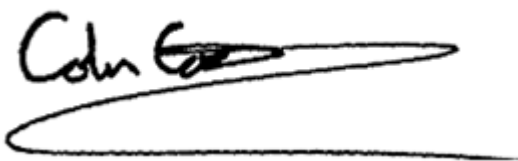
**Scottish Government Response to Ofcom Consultation:
The future role of spectrum sharing for mobile and wireless data services – Licensed sharing, Wi-Fi, and dynamic spectrum access**

*Scotland's Digital Future: Infrastructure Action Plan*¹ outlines the Scottish Government's commitment to a future-proofed infrastructure that will deliver world-class digital connectivity across the whole of Scotland by 2020. This underpins an ambition for Scotland to become a world-class digital nation and requires that people living, working and visiting Scotland can communicate and connect instantly using any device, anywhere, anytime. Our 2020 vision for digital connectivity is set out in high level terms at www.scotlandsdigitaldialogue.org.

We fully recognise the key role wireless and mobile communications will play in achieving this vision and we view spectrum sharing as having a potentially significant role in this process. We therefore welcome the opportunity to provide a high level response to this consultation at ANNEX A.

I hope this response is useful and I would welcome the opportunity to discuss this matter with Ofcom in further detail.

Yours faithfully



Colin Cook
Deputy Director, Digital Strategy & Programmes Division

¹ <http://www.scotland.gov.uk/Publications/2012/01/1487/0>

Introduction

*Scotland's Digital Future: Infrastructure Action Plan*² outlines the Scottish Government's commitment to a future-proofed infrastructure that will deliver world-class digital connectivity across the whole of Scotland by 2020. This underpins an ambition for Scotland to become a world-class digital nation and requires that people living, working and visiting Scotland can communicate and connect instantly using any device, anywhere, anytime.

Wireless communications such as mobile services, Wi-Fi and broadcasting, are recognised as an integral part of realising this vision. A recent study estimates that the contribution of radio spectrum use to the UK's GDP was £52-56 billion in 2011, around 60% of it generated by mobile communications. Mobile data traffic levels have increased dramatically and estimates indicate that demand for mobile data by 2030 could be 80 times greater than today's values.

Scarcity of spectrum and this growing demand, call for both the development of more spectrum-efficient technologies and a more efficient and flexible spectrum management approach, geared towards maximising economic value and assuring space for spectrum's broader social value.

We understand that Ofcom is adopting a spectrum clearing approach with a view to increasing frequency ranges available for use by mobile broadband services. However we recognise that this approach has limitations in that there are increasing difficulties in identifying frequencies that can be fully cleared below 6 GHz (i.e. the range of frequencies better suited for mobile broadband.) At the same time, we appreciate that international objectives on harmonised use of spectrum must be observed, whilst measures must also be undertaken to ensure that existing use, such as the operational and strategic use of spectrum by the emergency services and other crown users, is not compromised.

Furthermore, we recognise that traditional spectrum management – based on strict control of interference, with an emphasis on technical efficient use of spectrum and giving preference to the existing services – allows for significant parts of the spectrum being hardly used and for a slow response to changes in markets and technologies. We therefore welcome Ofcom's attempts, through sharing of spectrum, to bring a new dimension to a more efficient and flexible approach to spectrum management.

Questions in this call for inputs

Given the specific focus of the Scottish Government's interest, responses to the following questions are provided:

Question 7: Which frequency bands are most likely to be best suited to providing geographical shared access, including via a geolocation database approach, for use by mobile broadband, for example small cells and M2M applications?

See response to Question 14.

Question 14: Do you have any other views on any of the issues discussed in this consultation?

² <http://www.scotland.gov.uk/Publications/2012/01/1487/0>

Meeting the growing demand for mobile broadband requires significant new investment by the mobile network operators (MNOs). Network sharing is being used by MNOs as an important way to reduce both CAPEX and OPEX and will increase with the deployment of 4G networks. We believe that this is likely to transform network sharing into a central feature of mobile network operation.

Active network sharing has been addressed by the 3GPP standardisation efforts, essentially from Release 6, and as of Release 11, 3GPP specifications include two approaches to sharing an LTE radio access network: the Multi-Operator Core Network (MOCN) and the Gateway Core Network (GWCN) approaches.

MOCN allows physical RAN sharing while GWCN allows physical core network and RAN sharing. Both rely on spectrum sharing/pooling, thus allowing to view spectrum sharing as a component of network sharing.

Active network sharing may be seen as a potential solution to extend coverage to less densely populated/rural areas. If MOCN or GWCN approaches are used, including spectrum sharing/pooling, up to 40% of cost savings are estimated within the industry.

For rural coverage, in general, sub-1 GHz frequencies should be considered, given the favourable propagation characteristics of lower frequency bands, allowing coverage at lower costs and better indoor coverage as well.

4G deployment using 800 MHz is now underway in the UK, licences having been issued to all four MNOs. The Scottish Government would encourage Ofcom to explore the possibility of regional spectrum sharing/pooling in this band. This also extends to the 700 MHz band and the lower broadcast TV band which are being considered for IMT/mobile broadband identification /assignment.

We recognise that usage of such share/pooled spectrum would require innovative commercial models, which may require regulatory approval. This might include spectrum leasing or use of Licensed Shared Access/Authorised Shared Access (LSA/ASA), e.g. geographical sharing of spectrum by one or more MNO (800 MHz licence holders). We would encourage Ofcom, together with the MNOs, to explore how these types of models might be feasible in the UK.