



Issue 1

BT's response to the Ofcom consultation document:

**Mobile Coverage Enhancers and their use in licensed spectrum**

*(Issued by Ofcom on 7 May 2014)*

**BT's response to the Ofcom consultation document  
"Mobile Coverage Enhancers and their use in licensed spectrum"**

BT is pleased to have the opportunity to comment on these proposals from Ofcom regarding the deployment of mobile repeaters which are not provided by the mobile network operators.

We recognise that Ofcom is obliged to enable licence exemptions for those radio devices which fulfil the various criteria regarding not causing interference to other radio systems; however we believe that such consumer provided mobile coverage enhancers do present a potential risk to the operation of mobile networks.

Mobile networks require detailed planning to maximise the coverage and capacity and to deliver the best possible quality of service. We consider that the un-controlled use of the spectrum licensed to operators by consumers should not be permitted as it introduces an unacceptable risk of disturbing the operation of the networks that cannot easily be controlled. We understand that these proposals are for devices which are intended to be used in those areas where there is considered to be poor coverage, and therefore the risk of disturbance may be lower, however our concerns remain for the following reasons.

Firstly, there is a potential risk that such devices may have a poor RF performance and hence a proliferation of them could raise the noise floor in the band, with a consequential impact on the overall efficient use of the spectrum.

Secondly, one of the "advantages" of such devices is that they could potentially operate across the whole band in order to amplify signals for the networks of more than one operator. Whilst this might be seen as a benefit, if the coverage enhancer is also amplifying the signal of a network for which there is already good coverage, it has the potential to disturb the reception for other users.

There is also the risk that consumers might try to use these devices not only in areas where there is poor reception, but also in areas where there is reasonable reception, in an effort to maximise the data throughput of their device. Given that networks are planned on the basis of assumed coverage and throughput of devices as a function of their position within a cell, any unexpected deviation from the normal assumptions could potentially disturb the performance of the network, and signal reception for other users of the network.

We note that while such consumer repeaters are permitted in the USA, it is required that the users of such repeaters register with their network operator, and operate in accordance with the associated rules about not causing interference. It is our understanding that this is a tightening of the previous regulations, which would suggest that problems have been experienced, which triggered these tighter regulations.

But over and above these concerns, we believe that it should be highlighted that the industry view of such small cells is changing. Until recently mobile networks were based on the deployment of macrocells, with additional microcells as necessary for enhancing capacity (or coverage) and limited use of picocells to improve coverage/capacity in certain locations. Femtocells have started to be offered by network operators (under their control), normally in conjunction with a wired (DSL) data connection to provide in-fill in areas where there is little or no coverage, notably inside homes and offices but also in rural communities. "Small cells" have until recently been viewed as a niche in a world which was dominated by large cells. However the industry view is now changing, and a growing dependence on the use of small cells (particularly femtocells) is expected.

BT's own plans include use of small cells in 2.6GHz spectrum and recognise the opportunity and advantages that arise from use of such technology in conjunction with fixed broadband. In a world where all mobile networks are much more dependent on small cells, the introduction of coverage enhancers in an uncontrolled manner could trigger unexpected consequences, to the detriment of all network users.

In the absence of any means to register and control (including ceasing operation of) consumer provided mobile coverage enhancers, **we believe that they should not be permitted to operate in the licensed spectrum used by UK mobile network operators, in view of their potential to interfere with the efficient operation of these mobile networks.**