

Scottish Government Response

On 31 January 2012, the Scottish Government published its strategy document: *Scotland's Digital Future – Infrastructure Action Plan*³. The fundamental principle set out in the *Action Plan* is the delivery of world-class digital connectivity across all of Scotland by 2020. The *Action Plan* is forward-looking and therefore in response to this consultation, the Scottish Government is focusing on two key areas where we believe the 800 Mhz and 2.6 GHz spectrum has the potential to significantly impact delivery of its world-class targets. These areas are:

- Coverage; and
- Path to “True 4G” (LTE Release 10).

Coverage

Geographic Coverage

The consultation document suggests that a 95% obligation (as originally proposed by Ofcom) could be achieved by upgrading existing sites. We believe that the UK should be more ambitious and use the deployment of 4G as an opportunity to extend mobile coverage, particularly with regard to data. If we are serious about developing a globally-competitive digital economy, the industry must be encouraged to invest in infrastructure. The drive to renewables will continue to bring high-tech investments to remote areas so it is important that communications infrastructure is in place to support this. In addition, tourism, agriculture and forestry are all starting to use mobile broadband for commerce and productivity gains and so it is essential that these sectors also have access to the necessary infrastructure.

Anecdotal evidence from one of the UK's mobile network operators has suggested that it will cost in the region of £200 million to get from 95% to 98% population coverage. Whilst the Scottish Government has no comparators to offer, we are of the view that the cost of this higher coverage level must also take into account of the fact that the much broader geographic coverage that such a coverage level represents. It must be remembered that the 3% increase will benefit far more than 3% of the population as many people spend some time in rural areas or wish to communicate with people in rural areas.

In terms of question 5.1 of the consultation [*Do you have any comments on the proposal to include a coverage obligation in at least one of the 800 MHz licences, and the proposed extent of such a coverage obligation?*], in high level terms, the Scottish Government is broadly supportive of a coverage obligation of 98% on one of the 800 MHz licences to be auctioned; this is consistent with the representation made in our response to the first consultation. And to reassert a further point from our response to the first consultation, we believe that the obligation should go further than be merely a 98% UK average but should apply to each constituent UK nation, and furthermore, every local authority area within each nation.

³ <http://www.scotland.gov.uk/Publications/2012/01/1487/0>

In terms of question 5.2 [Do you have any comments on which of the two approaches proposed for the specification of such an obligation would be preferable: Approach A, which would require the licensee to provide a 4G mobile data service to an area within which at least 98% of the UK population lives; or Approach B, which would require the licensee to provide the specified mobile data service with coverage comparable to the combined mobile voice coverage of today's 2G networks and in addition to provide the same service with coverage comparable to that of the additional mobile voice coverage achieved through the MIP, in those areas where MIP infrastructure is capable of supporting a 4G mobile data service?], the Scottish Government is broadly supportive of Approach B.

We believe that tying the spectrum auction to the Mobile Infrastructure Project (MIP) represents a sensible way forward as it is highly probable that current 2G notspots will be 4G notspots in the future. Furthermore, we are keen to see the deliverables of the MIP further maximised in Scotland, and we believe that the backhaul which will be delivered through the Scottish Government's procurement strategy – as set out in Programme 1 of the *Infrastructure Action Plan* – has the potential to extend the reach of these deliverables. However, we have concerns that the deliverables arising from the MIP in Scotland are still unclear.

Consider Ofcom's Communications Market Report 2011 – Scotland⁴ which indicates that UK 2G coverage is 96%, with Scotland at 85%. It is conceivable that the overall 99% MIP target could be achieved with Scotland's percentage only increasing by a small amount. Based on the lack of information around the MIP, we are concerned that the eventual coverage arising from the MIP could be much lower than 99% in Scotland. This would not be a desirable outcome for Scotland, and we would want to ensure that the ultimate "4G" coverage delivered from the MIP at least matches Approach A – 98% coverage. We would encourage Ofcom to undertake appropriate modelling to ensure the desired coverage levels arising from the license obligations can be delivered in Scotland.

Indoor Coverage

The Scottish Government would like to register its view that ensuring adequate indoor coverage is also a crucial issue to be considered by Ofcom in awarding this spectrum because, as reported in Ofcom's Communications Market Report 2011 - UK⁵, the majority of mobile device utilisation is indoors – a fact also generally observed by many industry commercial operators. The consultation document acknowledges difficulty in measuring indoor performance. We recognise that a range of issues affect the effective performance of modern-day devices. We would agree that further work is required to specify indoor coverage benchmarks – this could include writing an exact specification to be defined for a test vehicle to mimic typical indoor usage. This could be driven to settlements around the UK to check if actual indoor coverage matches predictions from models.

Within Scotland, in particular, there is discussion that indoor practical performance of mobile devices is very poor, compared with, say, Greater London. With the popular trends of both smart phone and tablet computers, this situation is likely to become considerably worse. In considering true 4G and future proofing, the Scottish Government believes that it would be useful to have a truly representative measure of 'practical user performance' and would

⁴ <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr11/scotland/>

⁵ <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr11/uk/>

encourage Ofcom to conduct independent measurements, in the Scottish context, on this specific topic.

Deployment of “True 4G” (LTE release 10)

The above notwithstanding, the Scottish Government would like to see the entire 800 Mhz and 2.6 Ghz auction process designed to facilitate the fast-tracking towards “True” 4G (also known as LTE advanced, or as designated by the ITU: LTE release 10) in Scotland (and the UK). This is consistent with our world-class aspirations for Scotland. However, we do not believe that the current proposals are conducive to this.

We believe that there is some misconception over exactly what constitutes 4G and what the UK telecoms market is imminently about to deliver, so it’s worth clarifying this issue. LTE, as described in the consultation and which is the technology currently being trialled by Everything Everywhere, is expected to deliver speeds of 6-8 Mbps when deployed in the near future. Although commonly referred to by many as “4G”, this technology (designated by the International Telecommunication Union (ITU) as LTE release 8) does not satisfy the requirements set forth by the ITU – and indeed the ITU has criticised US operators for misusing the term: Total Telecom reported on 7 June 2011⁶ that *“ITU secretary general Hamadoun Touré has poured cold water on U.S. operators’ efforts to pass their mobile services off as ‘4G’, insisting that none of the technologies currently on offer comply with the ITU’s fourth-generation mobile standard”*.

“True 4G” (LTE release 10) is the technology which has the potential to deliver speeds in the realms of 1 Gbps+ and therefore has the potential to significantly contribute to the Scottish Government’s world-class aspirations.

Delivery of such a service is dependent on the availability of a contiguous block of sub-1 GHz spectrum – which could be used to create a single network all operators could use. However, this is contrary to the proposed packaging of the 800 MHz spectrum which is designed to sustain competition in wholesale markets – ensuring four operators each get a share. True 4G requires around 100 MHz of spectrum to be ‘aggregated’ in order to be viable as both a technology and a service. The Scottish Government believes that the development of highly complex ‘heterogeneous networks’ (Het-Nets) will be inhibited by spectrum blocks being ‘scattered’ about, as will be the outcome of this auction as it is currently proposed. Whilst we complement Ofcom’s proposed approach to development of shared small cells – outlined in the consultation document – we believe that further detailed consideration of small cells, together with Multiple Input Multiple Output (MIMO) technology and Het-Nets is required, and we would encourage Ofcom to undertake further work in this regard.

As we articulated in our response to the first consultation, the Scottish Government does not believe that four discrete networks need be deployed to facilitate effective competition. As an alternative, we would like to see Ofcom put in place measures to encourage and incentivise wholesale mobile traffic between operators. Infrastructure consolidation is beginning to occur naturally (for example the T-Mobile and Orange merger) and exemplifies a global trend towards consolidation. In these financially challenging times, we do not believe that it makes sense to see capex duplication by the industry, but rather that measures are put in place to stimulate investment in shared infrastructure. As an initial measure, we would recommend that Ofcom puts in place an obligation on licensees to share their infrastructure – particularly in areas where there will be no other existing infrastructure,

⁶ <http://www.totaltele.com/view.aspx?ID=465379>

such as rural and remote areas. We believe that such an obligation would be very advantageous in providing a mechanism for competition in all areas. This may be important beyond price issues, as some operators may offer more innovative services appealing to business users, for example. However, it may be acceptable to allow a grace period before this is implemented to incentivise those making the initial investments.