

Ofcom Consultation: Notice of proposal to make regulations in connection with the award of 2.3 GHz and 3.4 GHz spectrum

Proposal for a break between the allocation and assignment stages of the 3.4-3.8 GHz spectrum auction to allow successful bidders to consult on better band planning for 5G

Proposal

A short break should be provided between the allocation and assignment stages of the 3.4-3.6 GHz auction to allow successful bidders to discuss between themselves assignments that offers an improved prospect of viable 5G RF channels emerging after the auction *via commercial agreements* and/or an opportunity to agree a more efficient band plan for the coming 5G era.

Background - What is different about 5G in spectrum terms?

What most differentiates 5G technology in radio spectrum terms is that it is being designed to operate in very wide RF channels. This delivers huge gains in implementation and spectrum efficiency relative to LTE (4G) *inter-band* carrier aggregation. If the conditions are to be created in a competitive market for 5G to deliver this leap forward, the RF channel bandwidth must be large enough to put some clear blue water relative to the 4G options. There is wide international industry consensus that a 5G RF channel width of at least 100 MHz is needed to deliver these conditions. *For brevity, such a very wide RF channels is referred to as a "5G RF channel"*. The wider the RF channel the greater the 5G technology "gain". (The most advantageous 5G RF channel possible from the forthcoming 3.4-3.6 GHz auction would be 150 MHz, although a very unlikely auction outcome).

Relevance to the Consultation Questions

It had always been understood that the spectrum auction would allow a mobile operator, that wanted a 5G RF channel, to bid for the amount of spectrum necessary to accommodate it. If this is the most efficient use in the best interests of consumers and a bidder reflects this advantage in their bid, the auction process, at least in theory, would allow this outcome. The introduction of the spectrum caps changes this assumption. The purpose of this contribution is not to challenge, comment upon or discuss the proposed spectrum caps but to propose a small procedural change that *might* mitigate its effect on the eventual emergence of 5G RF channels in the band.

Case for the proposed change

The reasons in favour of this proposal are:

1. Providing for a break between the two stages to allow the winning bidders to discuss between themselves assignments may enhance the chances of viable 5G RF channels being created *via commercial agreements after the auction*. For example, the two site sharing groups might want to open-up this option as a future possibility for reciprocal spectrum pooling or 5G cell capacity sharing.
2. This would make the spectrum auction slightly more “technology neutral” (4G technology can happily be packed into a 5G RF channel but 5G technology cannot fit into a 4G RF channel without damaging the advantage of the technology).
3. This opportunity may facilitate better band planning and may lead to more efficient use of the spectrum. This is less likely to happen once the race to market begins after the auction.
4. There is no good reason not to. Very little money is usually raised in the assignment stage.

Such a change ought not to be controversial *as it is quite neutral*.

Proposition Author

Prof Stephen Temple is submitting this proposal in a purely personal capacity. Prof Temple is a member of Euro5G that supports 5G PPP on spectrum issues, the Technical Secretary of the 5G IC Strategy Advisory Board and member of the IET Communications Policy Panel but does not necessarily represent the views of any of the members of these organisations.