

SPF Cluster 3: The future of spectrum sharing in the UK

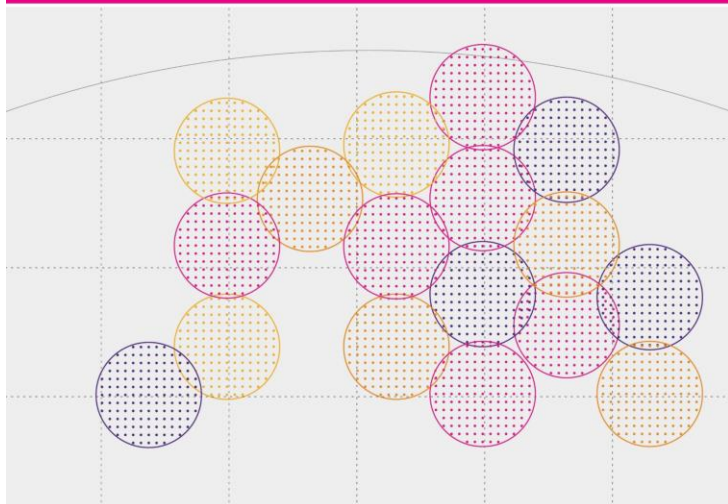
27 January 2022

The future of spectrum sharing in the UK



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- Report published today
- Follows Cluster 3 workshops and associated research that took place between June and October 2021
- Key content areas are:
 - Demand for 5G services and need for access to shared spectrum
 - Feedback on Ofcom's current spectrum sharing measures
 - The potential for Dynamic Spectrum Access (DSA) to be introduced into the UK

Demand for 5G services and need for access to shared spectrum

- 5G Testbeds and Trials and early 5G Mobile Private Network (MPN) activity provides some evidence that there is demand for shared spectrum
- Demand is still at relatively low levels, there is the expectation that demand will grow but differing views on how quickly this will happen
- 5G was highlighted as a key driver for shared spectrum for MPNs
- While much of the focus for shared spectrum was for MPNs to operate in spectrum identified for Electronic Communications Services (ECS), there was also interest in sharing of non-ECS spectrum (e.g. by the utility providers)
- Is a different approach required for indoor vs outdoor networks?
- A key issue for those investing in / building new networks is the need for investment certainty
 - Two common themes were reasonable certainty of access to spectrum at a viable cost for the duration for the investment (this could include a presumption that licences would be renewed on a rolling basis)
 - Availability of the relevant ecosystem (e.g. 3.8-4.2 GHz, 26 GHz)

Feedback on Ofcom's current spectrum sharing measures

- There was general agreement that the licensing schemes put in place by Ofcom (Local Access and Shared Access) are a welcome step
- Concerns were raised on access to information, restrictions that need to be addressed and the process to obtain licences
- The need to progress automation of the process for Shared Access was highlighted
- For Local Access Licences there were concerns about the speed of response from network operators to requests on spectrum usage
- Restrictions imposed on Shared Access Licences are a concern for potential users (e.g. power limits, use of directional/sectorised antennas)
- Potential improvements identified include:
 - The need for better interfaces and query functionality for Ofcom's spectrum data
 - Definition of a clear workflow for handling sharing requests
 - Provision of improved feedback to applicants (and recognition that commercial requests cannot wait weeks for responses)
 - Improved process for handling of change requests
 - Addressing issues with restrictions of use

The potential for DSA to be introduced into the UK and applicable frequency bands

- A key issue for DSA is its definition
 - There are multiple options in terms of database mechanisms, use of sensing, access mechanisms, level of competition for provision of sharing, use of a multi-tier spectrum access framework ,etc
- A key question for Ofcom is the roadmap for automation of Local Access and Shared Access Licences
 - Does this move in small steps through to DSA or make the move now to an advanced database system for nominated frequency bands?
- Automated spectrum sharing solutions already exist and these could be considered by government / Ofcom
 - The work on the DSA Functional Specification by Cluster 2 was highlighted as a potentially useful basis for taking work on spectrum sharing in the UK to the next step but the requirement for a policy framework to go around any evolution of this is a first step
- The only frequency bands raised as potential candidates for sharing in addition to those already covered in the Ofcom sharing schemes were 26 GHz outdoors and 6 GHz

Other issues captured

- The need to keep watch on developments with spectrum sharing outside the UK on both policy and implementation
- The regulatory position for provision of neutral host solutions – while it was hard to pin down the specifics of concerns, there is clearly some uncertainty among potential users
- Provision of services indoors – this was raised several times as an issue requiring more general analysis
- The need for clear review and impact analysis for sharing measures

Recommendations

1. DCMS / Ofcom should continue to develop understanding of communications use cases that might require shared spectrum (especially but not exclusively based on 5G) through feedback on Testbeds and Trials and ongoing dialogue with industry and others
2. There should be an increased focus on facilitating solutions for provision of indoor network capability and the authorisation regimes required to support these (e.g. streamlining the Shared Access Licence application process, possible light licensing or general authorisation of low power 26 GHz indoors if that would be compatible with higher power licensed 26 GHz systems)
3. Concerns about neutral host solutions suggest that Ofcom should study industry concerns and provide greater clarity on regulatory and licensing issues for these.
4. Ofcom should publish a scope and implementation timetable for automation of shared licence applications. Also, KPIs should be developed for the application process workflow to provide greater commercial certainty to licence applicants
5. Ofcom should address the issues raised on technical matters and restrictions applied to shared licences
6. DCMS should evaluate the merits of the three approaches emerging for DSA. (i.e. just move to DSA, follow a pragmatic roadmap, no need for DSA).