

Bolloré Telecom

Q6.3: We believe it is not desirable to assume that equipments (routers, tablets, smartphones) should continue to be replaced constantly after a short lifetime, because of the huge environmental impact (both on finite natural and energetic resources, and the associated pollution and waste).

Q6.4: Wifirst manages over 30000 wi-fi AP in France, in university residences, hotels, etc. Those equipments cannot easily and cost-effectively be upgraded, and their planned lifetime is over 5 years, therefore moving or upgrading the equipment does not constitute a satisfactory solution. Of course, this situation is for France and Wifirst does not have any activities in UK, yet the whole methodology assuming a short lifetime to equipments does not apply to carrier-grade deployments.

Q13.3-13.6 :

For small cells deployments (that are mass-market equipments), it is desirable to avoid custom operator-specific filters. To our knowledge, it is not technically possible to implement the restrictive baseline without such custom hardware filters (even when using some guard band). Therefore synchronization is required.

However, it should be anticipated that inter-operator agreement may not be straightforward in some situations :

- **Lack of mutual incentive:** when eNB-eNB interference is dominant compared to UE-UE interference, the operator who has more downlink is aggressor and the operator(s) who has less downlink are victims. The same issue happens with the operator that configures more uplink if UE-UE interference is dominant. Unlike when interference is mutual, the aggressor has little incentive to compromise on parameters such as UL/DL ratio in those situations, and the negotiations to find an agreement on a common UL/DL ratio may be biased. Even if the aggressor complies with the regulation on unsynchronized operation (block edge masks), this forces other operators to implement custom filtering in order to avoid blocking
- **Unanimity required:** operator-specific filters are often required to comply with unsynchronized operation. Avoiding such operator-specific filters is desirable in order to get economies of scale – especially on small cells. However, this requires unanimity on the UL/DL ratio, that may not be easy to reach
- **Sustainability in time:** when operators deploy synchronized networks (e.g. avoiding operator-specific filters, with equipments that are only compliant with the permissive mask), challenging situations may occur if the synchronized operation is broken at a later point in time (e.g. if a new operator deploys without agreeing on synchronized operation) as the deployed equipments from the former operator(s) may not be compliant with the restrictive baseline.

For those reasons, Bolloré Telecom believes that in case operators deploy on a different timescale or if there is a majority of operators considering that it's desirable to rely on synchronized operation, a mediation from Ofcom to bring better guarantees on synchronization (together with option 4) may be relevant to consider as well, even despite it lowers the individual operator's flexibility. We also believe that the common UL/DL ratio may be

- mediated by Ofcom, if there is no inter-operator consensus
- periodically reviewed (either by periodic renegotiations, or from a central equipment - possibly hosted at Ofcom - that would take as input all operator's traffic need and automatically compute the proper common UL/DL ratio).

Indoor femtocell-only scenarios are an exception, as inter-operator synchronization may not be mandatory considering low power, average inter-femtocell distance, wall penetration loss, etc.