



RSPG CONSULTATION ON COGNITIVE TECHNOLOGIES

QUALCOMM AND NOKIA CORPORATION JOINT RESPONSE

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Qualcomm and Nokia welcome the opportunity to comment on the Radio Spectrum Policy Group Opinion on Cognitive Radio Technologies. We highly appreciate RSPG leadership and vision in shaping EU spectrum policies on such spectrum matters.

Ubiquitous and affordable access to the internet via mobile devices is key to democratising the internet throughout European society and achieving the Digital Single Market. In this context, making available harmonised spectrum for mobile broadband in a timely manner becomes a priority for European spectrum policies.

However, while non-commercial incumbent uses of spectrum, such as military, aeronautical and emergency services, remain as important as ever for Europe, the European Union and Member States are faced with an unprecedented challenge to making available new harmonised spectrum, with appropriate characteristics below 6 GHz, for mobile broadband services.

It is therefore thought that the development of a complementary authorisation model for spectrum rights of use, named “**Authorised Shared Access**” (ASA), which allows for a shared use of spectrum using cognitive radio technologies (geo-location databases, sensing, etc.) based on an individual authorisation model of spectrum rights, could act as a regulatory enabler to making available, in a timely manner, harmonised spectrum for mobile broadband while overcoming time, resource and political constraints.

Indeed, an incumbent user’s use of its assigned spectrum could vary in the time, frequency and spatial domains. Alongside the use by the incumbent, a further user, the ASA user, can be granted an ASA right. It is a right to utilise under-used spectrum without interfering with the incumbent user. There may be one or several ASA users per frequency band as there may be one or several incumbent users.

A key feature of ASA is to ensure a predictable quality of service for all rights holders and for consumers. ASA allows accommodating the commercial and non-commercial spectrum users’ (incumbent users) interests taking into account that spectrum rights do not have to be withdrawn from an incumbent user to be granted to another user.

While enabling swift availability of harmonised spectrum for the delivery of pan-European services, ASA will also maintain governments' sovereign rights over spectrum management and policy which take into account national requirements. Indeed, the ASA approach is consistent with government exercising either a “command and control” spectrum management policy or a more market demand based approach. It is also progressive – as the industry adopts global mobile standards and service providers scale their service offerings over multiple jurisdictions, ASA can progressively enable spectrum to be brought into use much more efficiently in a dynamic manner to meet consumers' needs and demand.

From an economic point of view, ASA has the potential to create substantial benefits for the European Union. The modelling suggests that an assignment of 200MHz of ASA spectrum, assuming 25% occupancy by the incumbent users, could result in direct benefits in the region of €65 billion per year¹. In addition, the indirect benefits for Europe could be considerable. These will include gaining a leadership position in cognitive radio development and enabling global standards adoption, leading to boosting economies of scale, more affordable and more capable devices for consumers as well as attracting investments.

Qualcomm and Nokia therefore believe ASA is a valuable approach which would make it worth developing further in Europe and invite the RSPG to:

- Work with the European Commission and Parliament to explore further, in the context of the Radio Spectrum Policy Programme, define and implement the ASA framework,
- Request CEPT to identify candidate spectrum bands that could be suitable to be made available for mobile broadband under an ASA framework and define the harmonised sharing conditions between mobile broadband and the incumbent users, like for example in the 2.3 GHz band.

¹ Ingenious Consulting