

Sharing frequency bands between mobile and fixed services: methodology and opportunities

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Abstract:

Mobile bandwidth demand is going to experience a dramatic increase, owing to three main causes:

- higher penetration of smartphones and other smart mobile devices (tablets, computer dongles, etc.);
- increased usage of bandwidth hungry applications and platforms (YouTube, Facebook, Instagram, etc);
- uptake of Machine-to-Machine (M2M) communications and of wearable devices.

Hence, operators are bidding regulators for new bandwidth to be opened for wireless broadband services. One option is sharing band between different services, taking advantage of the spatial and frequency filtering effects.

A promising candidate for sharing is the 3.4-4.2 GHz band. In this contribution we present these concepts and a methodology of computation for sharing between fixed and mobile services, which is then applied to real data of two important areas in Italy.

Results are encouraging and spur researchers to investigate further.