

Bandwidth sharing and new auction procedures

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Abstract

In Packet based radio transmission systems each packet, in the header, has a special field dedicated to the Operator's Code. It identifies the Operator of the Customer originating the packet.

It means that, in subsequent timeframes, a single frequency can carry information belonging to different Operators.

The situation is similar to the one occurring on traditional wirelines, in which a mix of packets, originated by customers of different Operators, are transmitted on the same wire.

The consequence (in the radio transmission case) is that several Operators can use the entire bandwidth, simultaneously, thus optimising the frequency usage.

Several additional advantages are achieved: from the necessity of a smaller number of antennas, to a lower environmental impact.

But the mechanism for selecting the Operators that will be authorized to the bandwidth usage must be changed.

Traditional auctions, similar to the recent UMTS ones, seem no more appropriate.

Suggestions and hypotheses on new auction mechanisms are presented.