

Sharing RF Spectrum with Commodity Wireless Technologies

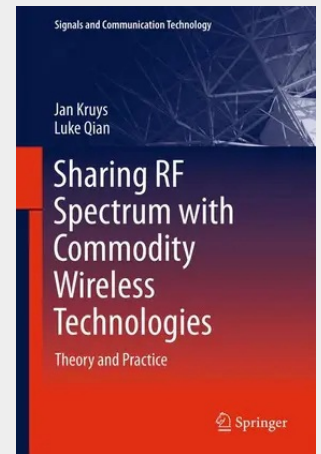
Theory and Practice

Much energy has been spent on the subject of spectrum scarcity that would threaten to stunt the growth of wireless technologies and services. This concern comes on the heels of the great successes of both cellular communications and consumer oriented communications like Wi-Fi and Bluetooth that have changed the way people use computers and communications and that have led to the creation of large new markets for products and services.

The response of many spectrum regulators throughout the world in addressing these concerns has been to consider releasing more spectrum for unlicensed or for shared use. An example is the spectrum that is released by the transition to digital TV: the frequencies freed up are destined, in part, to new applications that would be license exempt. A possible beneficiary of new spectrum releases would be "the smart grid", a networked application of digital sensor and control technology to the energy delivery segment of the energy utility industry. This policy has heightened the interests of all involved in spectrum sharing and many proposals are being considered or brought forward. However, theory in this area is scarce and practice proves resistive of quick solutions. A case in point is RLAN/radar spectrum sharing in the 5GHz range: six years after the ITU-R allocated this shared spectrum, the rules for sharing as well as the means to verify compliance with these rules are not fully mature.

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