

Elektrotechnik-Elektronik-Informationstechnik

EEI KOLLOQUIUM

The Cost of Free Spectrum

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Diskussionsleitung: Prof. Dr.-Ing. R. Müller

The explosive growth in demand for mobile broadband data services has motivated regulatory agencies, such as the FCC in the United States, to allocate more spectrum for commercial broadband access. A basic policy decision is whether to assign this new spectrum as licensed for exclusive use, or unlicensed (open access). We first review the policy debate, and subsequently consider a scenario in which new spectrum is added to an existing set of licensed bands. We compare the social welfare obtained from this new spectrum when designated as unlicensed or licensed, accounting for congestion due to interference. We show that adding a small amount of unlicensed spectrum often decreases the total welfare (analogous to Braess's paradox). We also compare the total welfare with a single service provider (monopolist) and many competing providers. When investment cost is taken into account a single service provider can be efficient.