

# Solving the Spectrum Shortage: Spectrally Efficient Technologies in Standards and Spectrum Management.

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The adoption of new spectrally efficient technologies has been slow, thus creating a spectrum shortage. This not only perpetuates a regulatory dilemma by creating false choices between "competing" applications, but it also increases demand and thereby raises the price for the small amount of new spectrum that is brought to auction. Additionally, many operators are missing the long-term financial benefits of reduced capital and operational expenses associated with more efficient spectrum utilization.

This talk explores the possibility that both regulators and industry members are failing to realize the benefits of technological advancements that allow for greater system capacity and coverage using a smaller amount of spectrum and make previously "stranded" spectrum usable. What actions can both standards and regulatory bodies take to achieve more efficient use of spectrum?

This talk will examine Adaptive Antenna systems and show how they can be the key to solving the spectrum shortage. While it is already known that most wireless technologies can benefit from Adaptive Antennas systems, we will also show how the benefits can be much greater when standards are designed with these considerations addressed up front. This talk will look at some of those considerations and how they impact standards and regulatory bodies.

Finally, we will examine the issue of spectrum allocation and Adaptive Antenna systems. This talk will present the results of a recent study that shows the beneficial effect of the use of Adaptive Antenna systems in addressing coexistence between adjacent band systems. We will also examine how the FCC can improve its spectrum management practices and policies to promote greater spectrum efficiency while maintaining its market-driven approach and continuing to provide the industry with the flexibility it currently enjoys.