

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Fixed and Broadcast Communications (5)

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ANALYSIS OF ADJACENT BAND MOBILE WIRELESS SERVICE INTERFERENCE TO
SATELLITE RADIO BROADCAST RECEIVERS**Abstract**

Subscribers to Satellite Radio broadcast services face overload interference caused by nearby transmitters of mobile Wireless Services operating in the adjacent radio frequency bands. Overload interference by the Wireless transmitters can create large static “dead zones” – muting reception of the Satellite Radio subscriber signal near the transmitting base stations, or it can create unpredictable mobile dead zones around transmitting Wireless user terminals. This situation will be more pronounced in a terrestrial network with a large number of transmitters operating adjacent to the Satellite Radio downlink broadcast frequencies. The paper provides an analysis of the overload interference problem and describes various methods to simulate the downlink and uplink interference conditions. As a result, practical spectrum coordination methods are presented that would eliminate such interference concerns; including rules founded in part on street-level signal density limits that could also foster deployment of more advanced and more effective networks.