

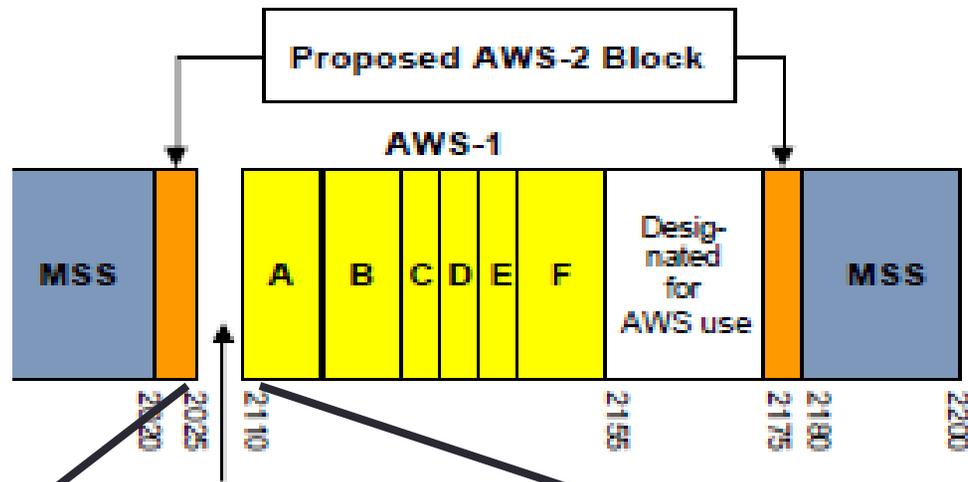
AWS/BAS



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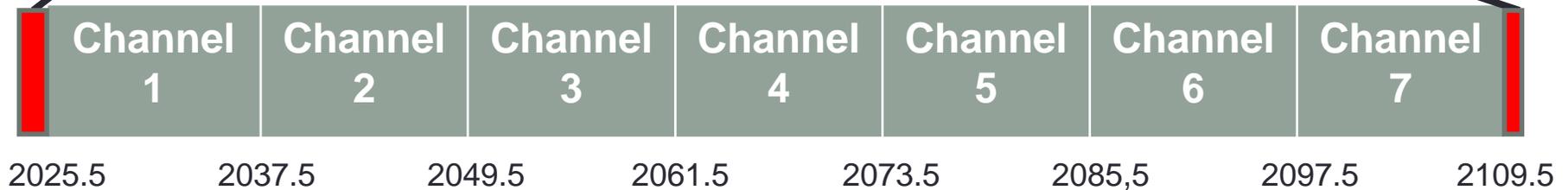


BAS Allocation



2025-2110 MHz:
BAS, Government Satellite

BAS Channel Map



BAS Service

- Service is primarily used for Electronic News Gathering (ENG) to distribute live TV shots from the field to the studio
- BAS licensees are generally licensed on all seven channels. Channels are coordinated using a local frequency coordination process
- Principal operation modes are temporary fixed or mobile within a specified geographic area or market. Itinerant use is also common. Fixed point-to-point operation is used in small markets & rural areas
- Digital modulation (COFDM) is the principal transmission mode. Digital video signal does not degrade gracefully (cliff-effect)
- BAS receivers are generally located on high sites and are usually capable of receiving all seven channels. Receiving antennas are usually steerable and capable of receiving in all directions

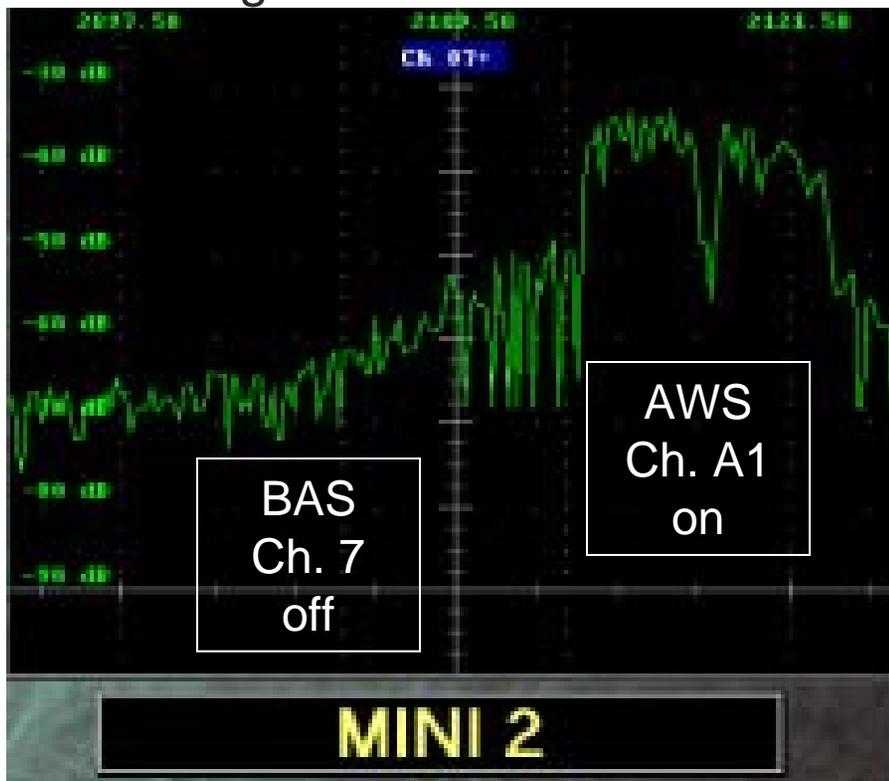
Interference Mitigation

- Interference to BAS receive site was acknowledged during the rulemaking phase of AWS. FCC established a coordination process between BAS and AWS prior to operating any AWS base or fixed stations (Part 27.1133). No technical guidelines were established
- Interference is a result of Out-of-Band Emission (OOBE) of AWS transmitters bleeding into adjacent BAS spectrum and brute front end overload of BAS receiver resulting from AWS transmitters operating in close proximity to BAS receivers
- Solutions focused on filtering out the AWS signal at the receiver site
- Both industries have worked cooperatively to mitigate the interference

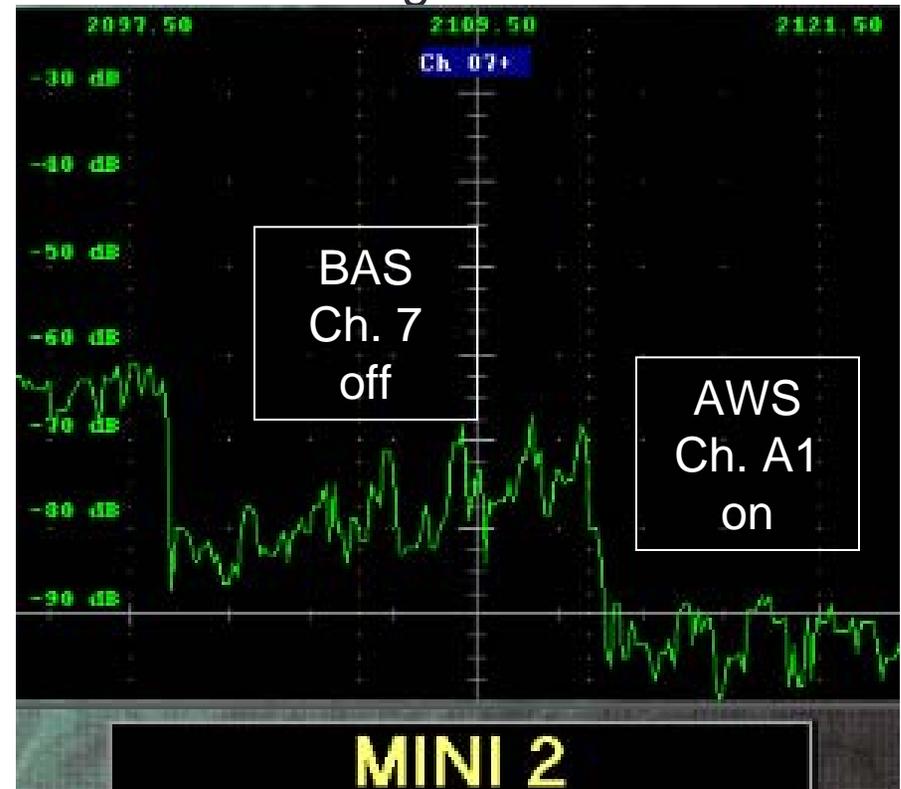
Chicago Case Study

- BAS Receiver located at Sears Building/tower.

AWS signal without filter

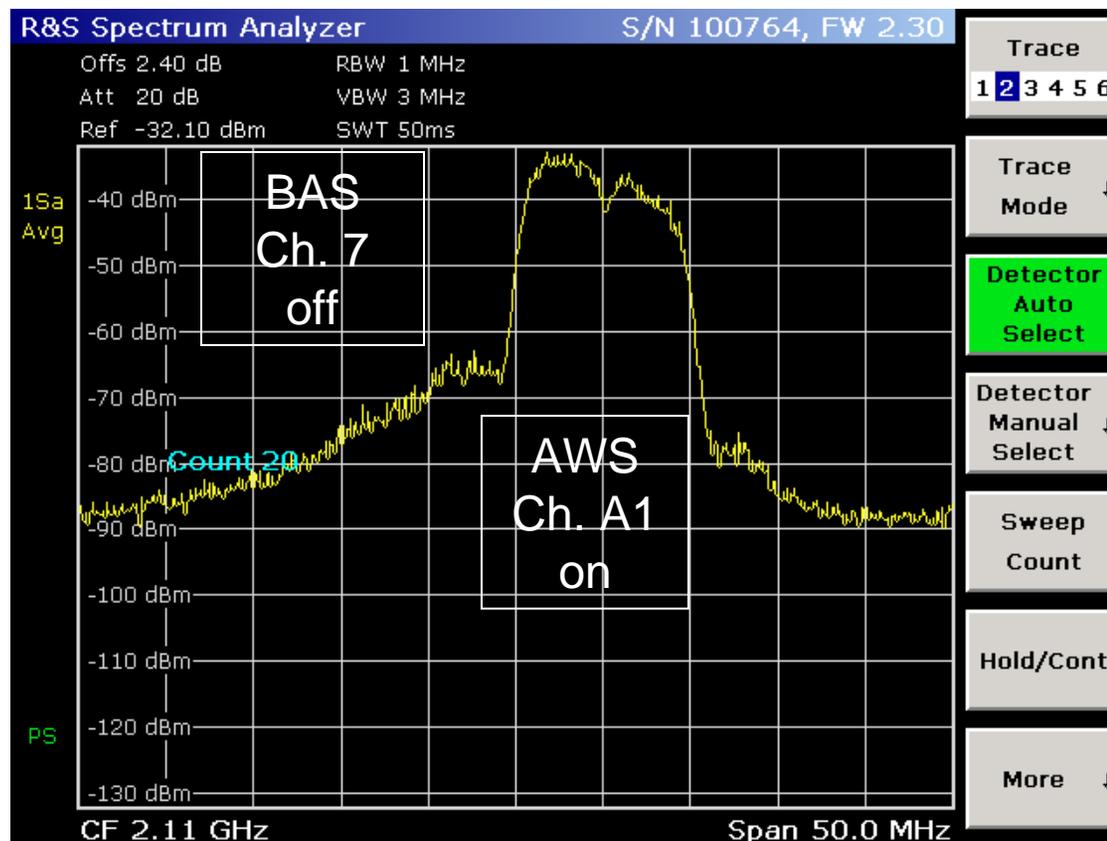


AWS signal with Filter



Chicago Case Study

- BAS receiver located at Sears Building/tower. Signal captured in a direction of high concentration of AWS transmitters



Additional Concerns/Lesson learned

- Most of the AWS implementations to date are located in or near large markets and are usually well planned and coordinated. Unfortunately in medium/small markets and rural areas, broadcasters use the BAS spectrum for fixed point-to-point operation and some of the receive sites are located on top of mountains with very high gain antennas. Interference has been reported as far as 50 miles. Need better coordination/education effort, especially for smaller telecom coops
- Aggregate interference from multiple AWS transmitters as the AWS network expands is still an issue that needs additional attention