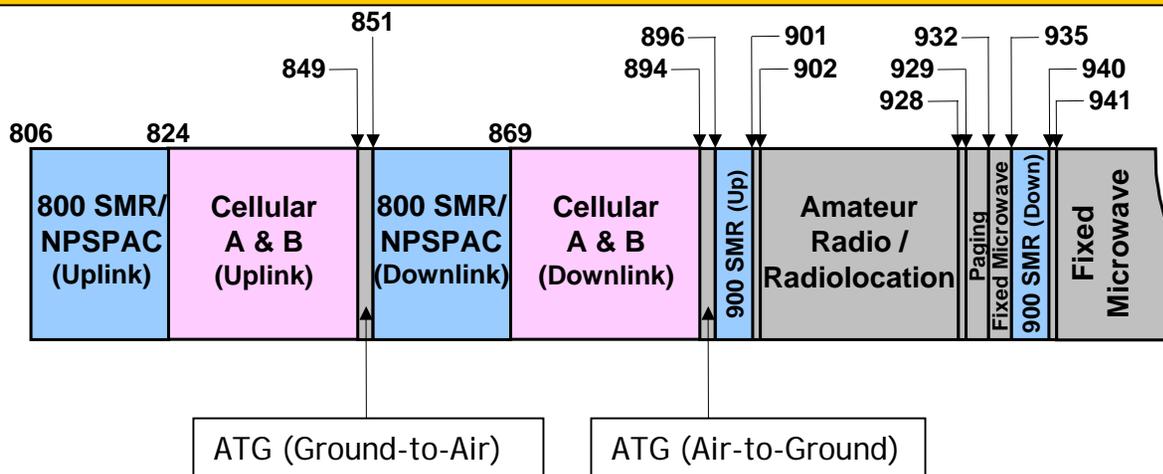


# Interference from Air-to-Ground Band Wideband Systems to Public Safety, Specialized Mobile Radio, and Cellular Licensees

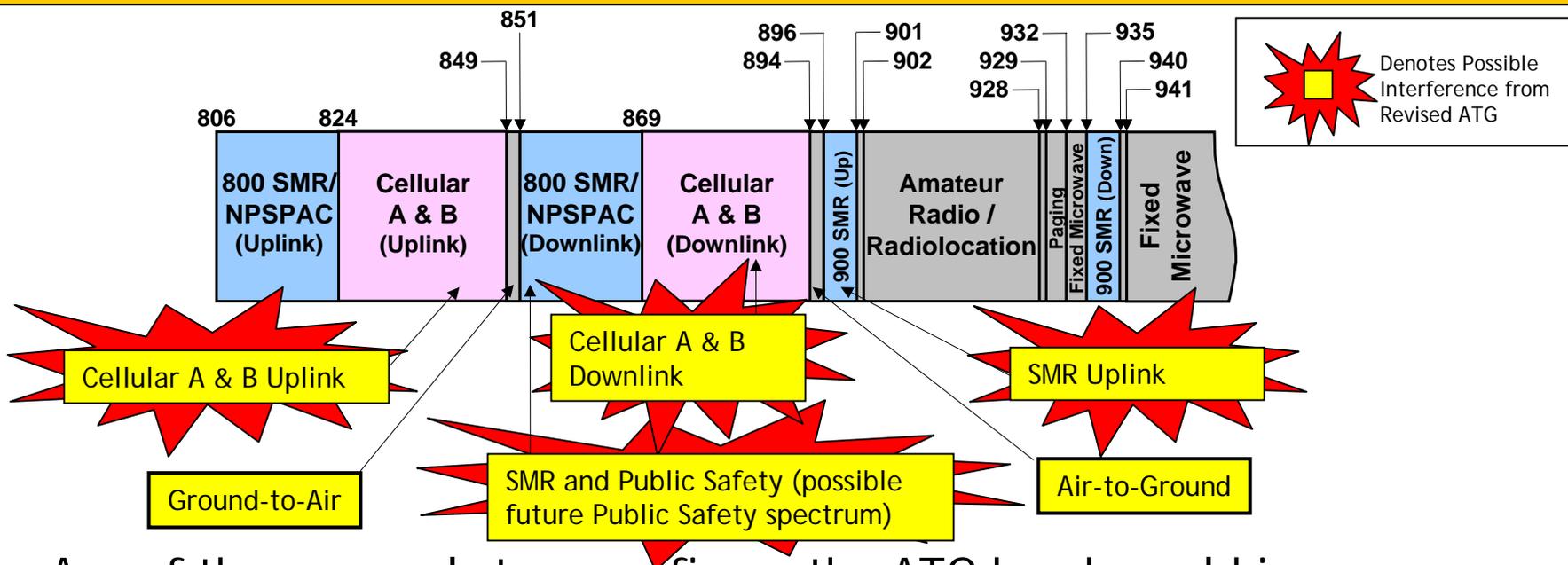
Presentation to the Federal Communications Commission

# Nextel, Public Safety, and ATG



- The current Air-to-Ground (ATG) block is comprised of two bands of spectrum at 849-851 MHz and 894-896 MHz.
- The ATG allocation is immediately adjacent to specialized mobile radio (SMR) licensees, such as Nextel, in the 800 MHz and 900 MHz bands, public-safety, and cellular A and cellular B block.
- Depending on Nextel's response to the FCC's *800 MHz Reconfiguration Order*, public-safety operations may also occupy spectrum immediately adjacent to lower ATG band at 849-851 MHz.

# Revised ATG Victim Bands: Public Safety, SMR, and Cellular A & B



- Any of the proposals to reconfigure the ATG bands could increase interference into the 800-900 MHz operations of SMR, Cellular, and Public-Safety licensees.
- Proposals to reconfigure the ATG block, such as that of Verizon, are not “modest modifications,” as Verizon has claimed.
  - Rather, the proposals would fundamentally repurpose the ATG bands to permit wide-channel operations.
  - Indeed, the FCC’s *ATG Notice* characterized the potential changes to the ATG band as “expansive.”

# No Record on Interference

- No record evidence addresses the serious potential for inter-band interference for any of the numerous proposals for ATG band reconfiguration before the Commission.
  - While some pleadings address the technical viability of the ATG proposals or the potential for intra-band interference among competing ATG providers, no inter-band interference analysis or testing exists for any of the numerous ATG band reconfiguration options.
  - Only two parties - AMTA and Motorola - even mention the potential for interference from ATG to SMR, Cellular, and Public Safety, and these parties mention this issue only in passing.
  - Verizon's proposal to grab the entire ATG band for itself without testing or competitive bidding is self-serving and anti-competitive.
- Nextel's preliminary analysis indicates that adjacent band interference is extremely likely under any of the proposed reconfigurations, but Nextel lacks the information necessary to perform a more detailed analysis.

# Proceed Cautiously with ATG

- The 800 MHz band is already plagued with interference, and the FCC has spent more than two-and-a-half years trying to resolve interference problems in the band.
- The complex, \$4.86 billion plan that the FCC adopted to resolve interference that public safety users receive in this band required years of effort and significant cooperation from both the private sector and public-safety licensees.
- To avoid adding to the 800 MHz public-safety interference problem or undercutting the FCC's solution, the FCC should analyze and test the potential for adjacent-band interference near both the 800 MHz ATG uplink and downlink bands.

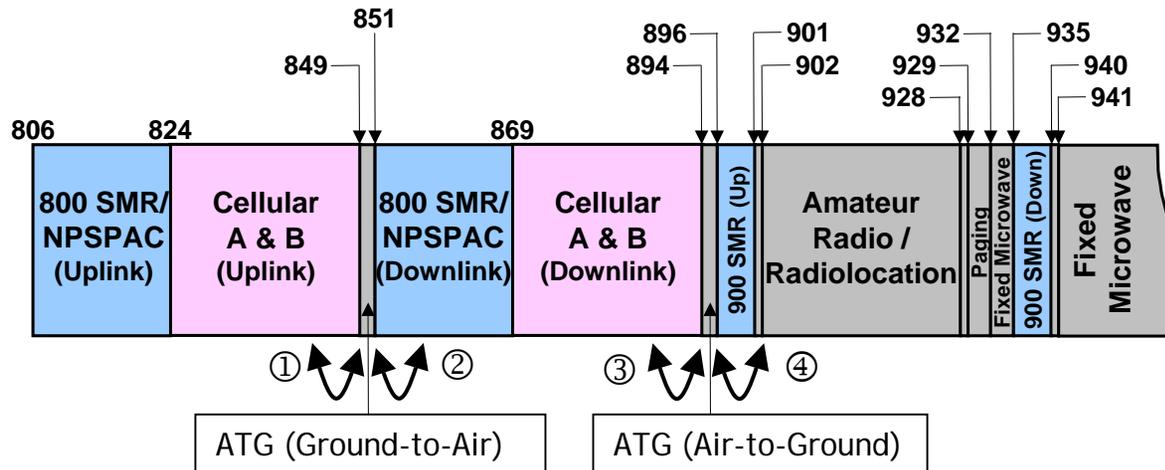
# Analysis and Testing Required

- Extensive analysis and testing is warranted *in this case* because the record is extremely limited and public-safety entities are not in a position to conduct their own analysis and tests of the proposals.
  - The 800 MHz band has a long and troubled history of interference;
  - The 800 MHz band is itself the subject of a massive potential reconfiguration.

# Analysis and Testing Required (continued)

- The FCC should make every effort to ensure that its reconfiguration of the service rule for ATG spectrum do not add to the already existing problem in the 800 MHz band.
  - If the FCC were simply considering *allocating* spectrum for ATG, extensive testing would not be required.
  - In this case, however, the FCC intends to adopt *service rules* for ATG in a band with a long history of chronic interference, and at least one operator vows to commence service next year.
- Although parties to this proceeding have extensively studied possible intra-band interference within the ATG band, no one has analyzed - much less tested - inter-band interference to SMR, cellular, or public-safety operations.

# Interference Cases



Case	ATG Allocation	Adjacent Neighbor
1	Downlink (Ground-to-Air)	Cellular Uplink
2	Downlink (Ground-to-Air)	SMR/Public Safety
3	Uplink (Air-to-Ground)	Cellular Downlink
4	Uplink (Air-to-Ground)	900 MHz SMR Uplink

# ATG Interference near 849-851 MHz

- The narrow, two-megahertz ATG band at 849-851 MHz separates cellular uplink and Public-Safety/SMR downlink operations.
  - The transition between an uplink and a downlink band is difficult and subject to extensive potential adjacent-band interference.
  - The ATG band provides a crucial margin to ensure a successful transition.
- Any changes to the ATG band will necessarily affect the ability of Cellular, Public-Safety, and SMR licensees to negotiate the transition between uplink and downlink operations.

# ATG Interference near 894-896 MHz

- Cellular downlink operations already generate significant interference into the 900 MHz SMR uplink.
  - The serious and increasing problem of interference from cellular downlink into SMR already requires immediate FCC resolution.
  - ATG is likely to experience even more interference from cellular downlink since it sits immediately adjacent to the cellular band.
  - Cellular interference to ATG will hamstring any ATG reform proposal unless the Commission limits cellular out-of-band emissions.
- Proponents of wideband ATG operation should submit a full analysis on adjacent band interference sufficient to provide the FCC and concerned parties with enough information to formulate a response.

# Conclusion

- Any of the proposals to reconfigure the ATG bands could increase interference into the 800-900 MHz operations of SMR, Cellular, and Public-Safety licensees.
  - No party to this proceeding has addressed inter-band interference in any meaningful way.
  - The Commission should proceed extremely cautiously due to the long legacy of interference to public safety licensees in the 800 MHz band.
  - The Commission should demand more analysis and field testing before adjusting the ATG bands in a way that might harm public-safety, SMR, and cellular operations.
- The Commission should exhaustively consider inter-band interference issues before adopting an order in this docket and, at a minimum, should not make any decisions until further technical analysis and limited field test are conducted on public safety, SMR, and cellular operations.