

# **SOUTHERN LINC**

## **Ex Parte Submission**

---

### **In the Matter of Improving Public Safety Communications in the 800 MHz Band**

**WT Docket No. 02-55**

**April 24, 2003**

#### **I. BACKGROUND OF SOUTHERN LINC**

- Subsidiary of Southern Company.
- Digital 800 MHz SMR system utilizing Motorola's iDEN technology. Over 500 base stations.
- Over 250,000 subscribers, including 30,000 public safety users (3,000 state and federal public safety entities). Other subscribers include governmental and commercial entities.
- Mobile communications provider for Southern Company's utility operating companies (Alabama Power, Georgia Power, Gulf Power, Mississippi Power, and Savannah Electric and Power).
- 127,000 square mile service territory (Alabama, Georgia, portions of Florida and Mississippi).
- Holds approximately 1,186 licenses. These licenses are in the interleaved (809-816/854-861 MHz), General Category (806-809/851-854 MHz), and Upper 200 SMR (816-821/861-866 MHz) portions the of 800 MHz band.
- Spent approximately \$52 million at auction on EA licenses.

#### **II. NATURE OF INTERFERENCE PROBLEM**

##### **A. Reasons For Occurrence Of Public Safety Interference**

- **Differences Between Public Safety Systems And Low-Site CMRS Systems.** Public safety systems generally provide extensive coverage with few transmitters; signal becomes weaker the farther away the user from the base station. If user is far from base station but close to CMRS

station, weak public safety signals must compete with strong CMRS signals.

- **Lack Of Frequency Selectivity By Public Safety Receivers.** Public safety receivers generally designed to hear broadly across the 800 MHz band, thus increasing vulnerability to interference.

#### **B. Specific Causes Of Public Safety Interference**

- **Intermodulation.** Multiple frequencies mix to create new frequency known as intermodulation product. If intermodulation product falls on public safety signal, communications can be degraded. Problem with public safety receivers is usually "in-receiver" intermodulation, in which undesired frequencies within passband of receiver mix in the receiver to create an intermodulation product.
- **Receiver Overload.** Receiver amplifies undesired signal within receiver's passband. If the signal is already strong, amplification can overload receiver.
- **Transmitter Sideband Noise.** If sideband energy is stronger than public safety signal, it can overpower public safety signal.

### **III. THE REBANDING CONTEMPLATED IN CONSENSUS PLAN WOULD NOT SUBSTANTIALLY MITIGATE PUBLIC SAFETY INTERFERENCE**

#### **A. The Degree To Which Consensus Plan Rebanding Would Decrease Third Order Intermodulation Interference Is Highly Questionable**

- Consensus Parties have failed to place in the record any evidence backing up their claim that Consensus Plan rebanding would significantly reduce third order intermodulation interference. Although they submitted affidavits from a Nextel executive and referenced "Nextel tests" and "mathematical showings," the affidavits do not contain specific empirical evidence.
- Consensus Plan provides for only 1% of public safety receivers to be replaced (and that is only because Consensus Parties estimate that 1% of public safety radios are too old to be retuned to new frequencies, and hence must be replaced). Thus, majority of public safety receivers will remain subject to intermodulation and receiver overload interference.

**B. Consensus Plan Rebanding Would Not Decrease Receiver Overload Interference**

- Receiver overload will not be mitigated because Nextel's operations and a portion of cellular bands will still be within public safety receivers' filter band pass.

**C. Consensus Plan Rebanding Fails To Account For Fifth Order Intermodulation Interference**

- Nextel's mitigation percentages are apparently based solely on intermodulation interference caused by third order intermodulation products. However, Motorola stated in its Comments that fifth order intermodulation is "the more common form of IM interference . . . in the 800 MHz band."
- Fifth order intermodulation products extend further into the band than third order products. With Nextel at 861-869 MHz, fifth order products would extend down the band to 845 MHz, which would encompass relocated NPSPAC licensees at 851-854 MHz. Thus, Consensus Plan would not protect licensees from fifth order products.

**D. The Consensus Plan May Not Begin Mitigating Interference For At Least Three Years**

- The Consensus Parties concede that rebanding might take three years to implement. (Consensus Plan at 25.) Thus, interference mitigation may not begin for three years.

**IV. PUBLIC SAFETY INTERFERENCE SHOULD BE ADDRESSED THROUGH LOCAL SOLUTIONS**

**A. Rationales For Employing Local Solutions Instead Of Nationwide Rebanding**

- **Local Solutions Will Immediately Begin Mitigating Interference.** Local solutions can be employed immediately; rebanding will take years.
- **Public Safety Interference Does Not Exist Everywhere.** Relatively few areas of country are experiencing interference. As such, unnecessary and inequitable to implement nationwide rebanding.
- **Responsibility Should Lie With Interference-Causer.** Rebanding punishes licensees that are not causing interference by forcing them to relocate. Local solutions require only interference-causing licensees to incur burden and expense of remediation.

- **Nextel's \$850 Million Could Remedy Many Individual Interference Situations.** For cost of rebanding, countless individual interference situations could be corrected.
  - **Portland Experience.** For example, Nextel used local solutions to remediate extensive interference that it was causing in Portland, to the point that local officials no longer view the interference as a significant problem. *See* attached article from The Oregonian, April 19, 2003.
- **The Efficiency Of Local Solutions Would Increase Over Time.** "Per-situation" cost of resolving interference incidents would decrease as licensees became more experienced in interference mitigation.
- **Local Solutions Will Be Required In Any Event.** Consensus Parties concede that local solutions will be necessary regardless of whether rebanding is implemented. (Consensus Plan p. 23.) Why go through disruption, burden, and expense of rebanding when local solutions will still be required?
- **Using Local Solutions Does Not Preclude Rebanding.** If local solutions do not appear to be working, FCC could revisit rebanding.

**B. Local Solutions Can Include Frequency Swaps**

- Voluntary, localized frequency swaps would cost-effectively address discrete interference situations without burdening uninvolved licensees.

**C. Local Solutions Can Include Best Practices**

- CMRS licensees could decrease power, increase antenna height, change antenna patterns, or reduce down-tilt.
- CMRS licensees could avoid utilizing frequencies that cause intermodulation products.
- Public safety licensees could increase signal strength.
- Public safety licensees could upgrade to receivers with intermodulation specifications of 70 dB, which are more immune to intermodulation interference than receivers with specifications less than 70 dB.
- Rules could be implemented to quickly identify and hold accountable interference-causers.

**V. REBANDING WOULD BE HIGHLY DETRIMENTAL TO NEXTEL'S COMPETITORS IN THE DISPATCH MARKET**

**A. Southern LINC, Nextel's Largest Competitor For Dispatch Service, Would Be Detrimentially Impacted**

- Under Consensus Plan, portion of 800 MHz band above 816/861 MHz would be CMRS and portion below 816/861 MHz would be non-CMRS.
- Southern and Nextel both operate SMR systems below 816/861 MHz. Under Consensus Plan, Nextel would move to "new" CMRS portion. Southern would be left in non-CMRS portion and would need a special exception to CMRS prohibition to operate.
- Other regulatory disparities would include:
  1. Forcing Southern to conform to potential standards of non-CMRS portion of band, such as restrictions on power and emission limits that could hinder its ability to compete and expand.
  2. Precluding Southern from taking advantage of pro-CMRS aspects of CMRS band, such as technical standards and licensing flexibility.
- Under Consensus Plan, Southern would still be required to relocate. Some providers estimate that approximately 30% of a provider's subscribers would leave it due to relocation inconveniences.
- Southern paid approximately \$50 million at auction for 800 MHz General Category spectrum. Consensus Plan would force it to relocate to less valuable spectrum.

**B. Dispatch Providers Other Than Southern LINC Could Be Detrimentially Impacted**

- Many dispatch providers would be required to relocate.
- Some dispatch providers were already forced to relocate during Upper 200 SMR Rulemaking and consequently lost many subscribers. Forcing another move and loss of more subscribers would be highly inequitable.
- Many licensees paid tens of millions of dollars at auction for 800 MHz General Category spectrum. Consensus Plan would force them to move to less valuable spectrum.

**VI. THE CONSENSUS PLAN HAS NUMEROUS FLAWS IN ADDITION TO THE MANDATORY REBANDING PROVISION**

**A. Proposed Funding For Consensus Plan Is Beyond FCC's Authority And Is Highly Conditional And Tenuous**

- FCC lacks authority to require Nextel to fund Consensus Plan.
- No provision for continuing to fund relocations if Nextel's contribution runs out prior to completion of relocations.
- Nextel would pay out its contribution in relatively small installments over approximately three years (or more). No real assurance that funding will continue to be paid if Nextel goes bankrupt, is bought out, etc.
- Nextel has stated that its contribution is contingent on FCC adopting every aspect of Consensus Plan as written.

**B. Relocation Coordination Committee Has Many Legal And Practical Problems**

- RCC would oversee relocation of 800 MHz licensees.
- RCC would be comprised of Nextel, two members of LMCC that represent private wireless, and two members of LMCC that represent public safety.
- Questionable as to whether FCC would have authority to implement RCC. (Possible violations of Government Corporation Control Act, Federal Advisory Committee Act, and constitute impermissible subdelegation of authority.)
- RCC would lack oversight, transparency, and accountability (*e.g.*, decision-making processes would apparently be conducted behind closed doors; no requirements to account for spending of Nextel's funding).
- RCC not likely to be fully representative of licensees on 800 MHz band; more likely to be comprised of Nextel and other Consensus Plan signatories.

**C. Licensees Would Be Required To Divulge Confidential And Competitively Sensitive Information Regarding Their Systems**

- Such information is not necessary to facilitate relocation.
- Confidentiality of the information could not be assured.

**D. Consensus Plan Does Not Provide Sufficient Appellate Recourse**

- Licensees being relocated would have virtually no recourse for appealing decisions of RCC.

**VII. IF THE COMMISSION ADOPTS A REBANDING PLAN, SOUTHERN LINC SHOULD BE PROVIDED WITH CONTIGUOUS SPECTRUM IMMEDIATELY BELOW 816.5/861.5 MHz**

*Southern is opposed to rebanding. However, in the alternative:*

- If FCC grants Nextel blocks of contiguous spectrum through rebanding, regulatory parity requires that Southern be provided with similar allocation (same type spectrum and same operational rules).
- FCC should adopt flexible band plan that extends "cellularized" band to below 816/861 MHz for geographical areas corresponding to Southern's license holdings in each area. Southern would be given exclusive use of this extension.
- Graphical representation of foregoing is attached as **Appendix A**.
- Band plan for all licensees in 806-824/851-869 MHz frequency range within geographical areas of Appendix A is attached as **Appendix B**.

Attachments