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December 3, 2003

## **BY ELECTRONIC FILING**

Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 Twelfth Street, S.W.  
Washington, DC 20554

**Re: WT Docket No. 02-55 - - Ex Parte Presentation**

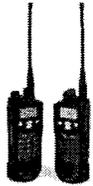
Dear Ms. Dortch:

On Tuesday, December 2, 2003, Michael Heavener, President of MT Communications and I met with the following FCC personnel regarding the above-referenced rulemaking on public safety communications in the 800 MHz band:

John Muleta	Chief, Wireless Telecommunications Bureau ("WTB")
Ed Thomas	Chief, Office of Engineering & Technology ("OET")
Catherine W. Seidel	Deputy Chief, WTB
James Schlichting	Deputy Chief, OET
Robert Bromery	Chief, Electromagnetic Compatibility Division, OET
Michael Wilhelm	WTB
Aaron Goldberger	WTB
Salomon Satche	OET
Roberto Mussenden	Public Safety and Private Wireless Division, WTB
Saurbh Chhabra	Electronics Engineer, OET

During the meeting we discussed alternative means to resolve interference problems relating to public safety communications. Attached is a chart outlining the issues discussed at the meeting.





# FCC Docket 02-55

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MT Comm

MT Communications

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December 2, 2003



# Who are we?

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- Public Safety Experience with GE Lynchburg, Virginia 1960's
- Started MTC in 1988 - Custom Radio Extensions
- Only Sell to Public Safety – Find “Best of Breed” Products
- Customers include Montgomery County, Gaithersburg, Baltimore, Prince William, State of Maryland, US Marshalls, Chevy Chase
- Dealer for Relm & EF Johnson – APCO 25 Signatories
- Electrical Engineer & MBA
- Retired from IBM as an Executive – 28 years of Project Experience
  - DoJ Anti-Trust Case Against IBM in 70's
  - Design and Build of Tempest IBM Personal Computers - Filters
  - Mobil Oil Worldwide Office Project - \$300M & 35,000 desktops
  - Director of Mobile Computing - Wireless
- Followed and filled comments on Docket 02-55
- Attend Region 20 800 MHz and 700 MHz Meetings
- Marketing to Region 20 PS S&L Agencies
- We believe we have a possible technical solution!



# Technical Solution

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- Build External Radio Filters into Speaker/Mic for Portables for 800 MHz
  - Put Filter ahead of Receiver - Only need about 8 dB of bad signal attenuation
  - Locate filter(s) in Public Safety Speaker/Mic space
  - Power, PTT and Tx/Rec Signals are all available
  - One basic design should work with new and existing Motorola XTS's and EFJ
  - Speaker Mic has net 4 to 5 dB signal gain over waist worn radio - 1 dB cable loss
  - Improves Talkout which is also a big problem!
  - New Coiled Cord Design - PS officers don't like existing straight cord
  - Current Coiled and Straight Speaker/Mics cost between \$100 and \$250 each
  - Use Pin Diode for Tx switching
- Filter Choices - Big, available and low cost supply from cellular/Nextel suppliers
  - Band Reject is smaller and cheaper but multiple ones are needed
  - Band Pass would be easier but larger
  - Active Filters could be programmed but use power
- Power Options for active filters and redesigned portables
  - Newer NiMh batteries that are 2+ times Mah of Standard 8 hour Moto Batteries
  - EFJ has exclusive battery saver circuit that turn Tx down to 1 watt in <90 dB area and improve battery life by as much as 30% - similar to cellular power control.
- Filter could be applied to NPSPAC channels without rebanding - need guard band
- For Non-NPSPAC - Rebanding is needed to have contiguous desired and undesired channels



# Implementation

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- Cost Target - Sell Filter Speaker/Mic for \$300 to \$400
  - Speaker/Mics are consumables - current models are between \$100 and \$250
  - 10% of the PS Users have reported problems - Cost for portables = \$52M
- Overcome two key issues:
  - Coiled Cord + new function such as emergency button!
  - Mechanically attached to Motorola XTS and EFJ radios - need tool to remove
- Mobiles would be much easier to develop and less expensive
- Technical Plan (6 to 12 Months) :
  - We need a computer model to predict location of interference & frequencies!
  - Create a lab environment to simulate interference - Motorola test approach
  - Construct a breadboard filter design and test in lab and field (Region 20)
  - If it works then construct final form unit and test in lab and field
  - Create a limited production run for several customer to verify
  - Market to known customers and take orders
  - Outsource Production to several possible firms
- Recommend full trial implementation in Region 20(DC) and 8(NY) to make sure solution/rebanding works and cost per plan.



# Motorola

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- Motorola
  - Largest Nextel Stockholder 20% > 10%
  - Sole supplier of Nextel Infrastructure and Subscriber Equipment
  - Supply 90% of Equipment and Services for Consensus Plan
- Motorola has filed comments that:
  - Portable cannot be built with higher IMR because of 2x battery needs
  - Their technical solution is to install software that lowers sensitivity in the newest radio(XTS5000) and install more sites with greater signal
  - Best Practices
- Motorola dominates the 800 MHz Public Safety Market
- Lack of Technical Innovation in PS compared to cellular
- Region 20 = 99% of the State & Local PS Systems (Fauquier County)
- Motorola stands to Win Big!!! \$1B to \$5 B additional business



# Consensus Plan

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- Lawsuits may delay implementation of Consensus Plan if adopted?
- Many Agencies don't believe they have a problem - Montgomery, Baltimore, etc.
- In the best case - a minimum of three years is planned - likely to take longer
- There is no cost control vehicle
- There will still be interference even after full consensus plan implementation.
- There are a number of flaws in the plan and data:
  1. Interoperability Programming of Radios - WMA area as an example
  2. #1 expense is reprogramming which would require 14,000 people working for 3 years? They don't exist?
  3. Don't see a S/I or program management team costed to run this migration
  4. Only plan to replace 1% radios with new ones - very low.



# Possible Commission Actions <sup>MT Comm</sup>

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- Technical solution needed through Innovation and Competition which does not currently exist - Involve other firms in solution.
- DHS and DOJ Grants require two bids for any purchases - Washington Post reported that \$67M of radios in DC have been purchased for public safety.
- Require technical standards for receivers to force IM and OOBE rejection
- Audit Regions for 800 MHz usage - need greenspace for rebanding & guard band
- Trial any Commission decisions on several typical regions such as 8 and 20 before nationwide implementation.
- Need a systems integration/management firm to plan and manage any rebanding