

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
The Development of Operational,) WT Docket No 96-86
Technical and Spectrum Requirements)
For Meeting Federal, State and Local)
Public Safety Agency Communication)
Requirements Through the Year 2010)

**PETITION FOR RECONSIDERATION
OF THE
FIRST REPORT AND ORDER
FCC 98-191**

**FROM THE
NEW YORK STATE TECHNOLOGY ENTERPRISE CORPORATION
75 ELECTRONIC PARKWAY
ROME, NEW YORK 13441**

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)
)
The Development of Operational, Technical, and) WT Docket No 96-86
Spectrum Requirements for Meeting Federal, State)
and Local Public Safety Agency Communications)
requirements Through the Year 2010)

To: The Commission

PETITION FOR RECONSIDERATION

**FROM THE
NEW YORK STATE TECHNOLOGY ENTERPRISE CORPORATION
75 ELECTRONIC PARKWAY
ROME, NEW YORK 13441**

I. INTRODUCTION AND SUMMARY

1. The New York State Technology Enterprise Corporation (NYSTEC) hereby submits the following petition for reconsideration to the Federal Communications Commission (hereinafter FCC or Commission) regarding the *First Report and Order* (FCC 98-191) on December 2, 1998.

2. NYSTEC is a private not-for-profit technology, engineering and commercialization company. Its mission is to accelerate applications of advanced

technologies to new markets, create innovative technology solutions for government and commercial clients, and assist economic revitalization in New York State (NYS) through technology innovation. Currently, NYSTEC is providing technical assistance to New York State in defining and procuring a next-generation, statewide wireless communication system.

3. In 1997 the New York State Police (NYSP) with the support of the New York State Office For Technology (OFT) and the Division of Budget (DOB) started the New York Statewide Wireless Communication Network (NYSWCN) Project. Because of its urgent need, the NYSP was designated by OFT as the lead agency on the project. The effort, however, is to support all state, and potentially local, agencies' needs. As a model of interagency cooperation, the project has been developing the requirements for the system and plans to prepare and issue a Request for Proposal (RFP) in 1999.

4. The need for NYSWCN is critical. A number of New York State agencies currently have radio systems at the end of their operational life and need to be replaced. This is also true of all other state agencies and many local systems. The concept of NYSWCN is a common, statewide, multi-agency radio communications network that:
 - simultaneously accommodates individual agency requirements,
 - allows agencies to retain independent operations, while sharing infrastructure,
 - supports electronic data transmission as well as voice communication, and
 - provides Land-Mobile Radio system functionality.

5. NYSWCN will provide radio coverage throughout the entire state for all levels of Public Safety. To achieve the goals of the project sufficient spectrum must be obtained as quickly as possible. New York State consists of 54,000 square miles of varying topography with over 18 million people in population. While the propagation characteristics of 700 MHz are less desirable for a statewide system than lower frequencies, it is the only band that currently has sufficient spectrum to meet the demands of NYSWCN. Any further delays in obtaining licenses in the 700 MHz band, due to the failure to define an interoperability standard and thereby delaying the availability of radio equipment, will be devastating to the NYSWCN project; the RFP for the new system cannot be issued until spectrum is secured.

6. The need for spectrum becomes ever more evident as we move toward the next millenium. Radio frequencies allocated for Public Safety use have become highly congested in many areas. This congestion becomes more evident in highly populated urban areas. The ability of these agencies to meet current requirements will only be hindered by not creating a standard for digital modulation for the nationwide interoperability channels. Without common air interface (CAI) and vocoder standards for the narrowband interoperability channels, industry will not be able to design and bring to market equipment for use in this band. Without equipment this band would remain idle. The Commission should define a standard now and allow for immediate use of this band.

7. One of the biggest problems facing Public Safety agencies' communications systems is the lack of usable spectrum. This is not a future need; it is an immediate need that cannot be put off any longer. Delays in this will only jeopardize the health and lives of Public Safety personnel along with limiting their ability to perform their duty to protect the lives and property of all Americans.¹ Therefore, NYSTEC suggests that the Commission should change its previous ruling and adopt a digital equipment standard for the narrowband interoperability channels.
8. One conclusion of the Public Safety Wireless Advisory Committee is: "More flexible licensing policies are desirable. The current approach, focused primarily on continuous narrow banding, does not provide the Public Safety community the flexibility of selecting or obtaining the most efficient technology to meet user-defined needs. Policies should encourage the use of the most spectrally efficient approaches while remaining technology neutral."² NYSTEC supports making the channel plan in the 700 MHz spectrum flexible, to be altered by the RPCs, within strict guidelines. For example, some regions may have requirements which are only met with a different mix of wideband and narrowband channels. There should be some allowances for making wideband channels narrowband and vice versus. Allowing such flexibility, the Commission will be taking another step in the right direction encouraging policies to promote spectrum efficiency.

¹ Final Report of the Public Safety Wireless Advisory Committee, September 11, 1996, at page 2

² Final Report of the Public Safety Wireless Advisory Committee, September 11, 1996, at page 3

9. Allowing flexibility in the technical requirements for antenna heights and power limitations is also necessary. The Commission has set rules without allowing any exceptions. In some areas or regions geographic considerations would make it justifiable to deviate from these rules to overcome local terrain obstacles.

NYSTEC proposes that deviations to the antenna height and power rules be at the discretion of the RPCs and based on sound engineering analyses. By allowing this flexibility effective and efficient use of spectrum is best achieved, which is the intent of the *Report and Order*.

II. A DIGITAL EQUIPMENT STANDARD NEEDS TO BE ADOPTED FOR THE 0.8 MHZ OF NARROWBAND INTEROPERABILITY CHANNELS

10. NYSTEC believes that it is necessary for the Commission to adopt a digital equipment standard for the 0.8 MHz of narrowband spectrum designated for nationwide interoperability.³ It is important to note that the narrowband interoperability channels under consideration are conventional mutual aid channels that are needed, and only used, during acute multi-agency response to emergencies. The standards defined for mutual aid interoperability do not necessarily define the digital modulation or access techniques of the radio system in the general use channels.

³ *Report and Order*, FCC 98-191, FCC 700 MHz Public Safety Band Spectrum & Channels, at ¶ 42

11. In the *Report and Order*, the Commission adopted a requirement for the operation of digital modulation on the narrowband interoperability channels.⁴ NYSTEC believes that digital modulation technology is an important factor in optimizing efficiency of spectrum use, and we agree with the Commission that all modulation in this band should be digital. However, NYSTEC believes that the Commission's failure to adopt a standard for the digital equipment in the spectrum designated for narrowband interoperability must be reconsidered.
12. It is NYSTEC's belief that appropriate timely use of this frequency band will be compromised without the adoption of a digital equipment standard. The primary concern of NYSTEC is that process for adopting a standard will take an extended period of time and thus will not allow immediate use of the 700 MHz band.
13. It is our belief that it will take industry at least two years to bring 700 MHz equipment to market with a standard defined. Two years alone is a substantial amount of time, and any standardization process will add four to five years to this period. NYSTEC believes that the entire process of creating a new standard will take up to six to seven years. As stated in the PSWAC, there is a current need for Public Safety spectrum in order for Public Safety agencies to perform their job of preserving life and property. The wait would be undue and inappropriate.
14. As stated in the *Report and Order*, "Although it is clear that digital modulation standards must be adopted for the narrowband...interoperability channels, we (the

⁴ *Report and Order*, FCC 98-191 at ¶ 110

Commission) would find it premature to do so at this time.”⁵ NYSTEC agrees that a standard digital modulation technique for the interoperability channels is essential, but we do not believe that it will be premature at this time to define a standard. In fact, failing to define a standard at this time will be detrimental.

15. This will be detrimental to the overall spirit of the 700 MHz band because industry will not develop equipment for this band. All 700 MHz radios must be able to operate in the interoperability portion of this band. Therefore, by not accepting some standard the Congressional mandate to give Public Safety spectrum in a timely manner will not be met.

16. Adopting a standard now will allow proper planning and implementation of emerging systems. Many states, along with New York, are currently engaged in the development of new wide area shared use communications systems. In order for these systems to be efficiently designed, and implemented in a timely fashion, available spectrum and equipment must be identified. Having sufficient spectrum to operate in is necessary to allow these new systems to be implemented and brought into use as soon as possible.

17. Today emergency response teams consisting of many different Public Safety and public service entities. Spectrum is needed now and cannot wait for a standardization process to take place. Delaying the adoption of standards, thereby

⁵ *Report and Order*, FCC 98-191 at ¶ 113

delaying the use of the 700 MHz spectrum will limit the ability of Public Safety agencies to serve the public. In order for Public Safety organizations to best use this band, it is absolutely necessary for them to have access to this spectrum now - not in several years.

III. THERE IS A NEED FOR INCREASED CHANNEL FLEXIBILITY IN THE 700 MHz CHANNEL PLAN.

18. The Commission has adopted a channel plan, which specifically defines the wideband and narrowband channel assignments in the 700 MHz band for Public Safety use. NYSTEC believes that flexibility is needed in this channel plan to accommodate justifiable channel definitions to meet unique regional requirements. The Commission's plan is a good general solution to the spectrum requirements for Public Safety. However, NYSTEC foresees the possibility of regions requiring a different mix of narrowband or wideband channels. In these cases the RPCs should have the flexibility to modify the assignment of wideband and narrowband channels where the need is justified.

19. Therefore, NYSTEC recommends that the Commission allow for some flexibility in current channel plan. NYSTEC also recommends that for effective spectrum use changes in the current plan must only occur after all other alternatives have been thoroughly exhausted. Any changes that occur in the channel plan should

only apply to the general use and reserve channels, not the interoperability channels.

IV. THE RULES FOR POWER AND ANTENNA HEIGHTS NEED TO BE MODIFIED.

20. The Commission's plan to imposed transmit power and antenna height limits for the 700 MHz band in an identical fashion to those requirements in the 800 MHz band⁶ NYSTEC does not object to those limitations. However, the Commission should modify its ruling to allow the RPC's to revise the requirements when needed to allow for unique and unusual geography and or usage patterns that occur in some regions. This flexibility is needed to ensure the most efficient and effective spectrum utilization.⁷ This flexibility can be conjoined with the engineering recommendations made by Working Group 8.8 of TIA's Committee TR-8.⁸

21. The Commission must also reconsider its decision to require use of automatic power control (APC) in mobile and portable units.⁹ APC should be an option, but not a requirement. APC is commonly used in digital cellular applications that do

⁶ *Report and Order*, FCC 98-191 at ¶ 143

⁷ This is particularly important for statewide systems where customized antenna and transmitter powers are often necessary to provide adequate coverage in a cost-effective manner.

⁸ *Wireless Communications Systems Performance In Noise- And Interference-Limited Situations Recommended Methods For Technology-Independent Modeling, Simulation, And Verification* published as TIA TSB-88.

⁹ *Report and Order*, FCC 98-191 at ¶ 144

not require dispatch operation. However, requiring APC would preclude technologies that are designed for Public Safety dispatch systems.

V. TELEVISION INTERFERENCE REQUIREMENTS NEED TO BE RECONSIDERED.

22. The Commission has adopted rules defining the broadcast/land mobile interference guidelines. These guidelines were made in order to protect reception of analog and digital television. Among these guidelines, the Commission adopted a D/U ratio of 40 dB for co-channel separation.¹⁰ Based on the analyses which industry has submitted to the Commission, NYSTEC believes that the Commission has not fully given consideration to these studies.

23. There are considerable propagation differences between the UHF (470-512 MHz) and 700 MHz bands. Detailed engineering analysis shows that 700 MHz signals attenuate much faster than the UHF signals. NYSTEC is aware that Motorola will be submitting further technical evidence of the bands characteristics. NYSTEC believes that the Commission should thoroughly review Motorola's analyses.

¹⁰ *Report and Order*, FCC 98-191 at ¶ 152

VI. NON-GOVERNMENTAL ORGANIZATION LICENSING RULES NEED TO BE MODIFIED AND/OR CLARIFIED.

24. Under the *First Report and Order* non-governmental organizations (NGOs) are eligible for licensing in the 700 MHz band. NGOs are eligible for licensing in the 700 MHz band when expressly authorized by a state or local governmental entity whose mission is the oversight of or provision of such services.¹¹ NYSTEC recommends that the Commission reconsider this ruling.
25. Under the current ruling an NGO must modify or terminate its Public Safety license when contracts and authorizations expire or commence. This would force the adoption of another process for overseeing NGO licenses. Not only does this add additional license maintenance and oversight, it also increases the possibility for even more litigation. This process will burden unnecessarily the volunteer RPCs. For these reasons, NYSTEC recommends that NGOs operate under licenses held by the governing entity.

VII. RPC DISPUTE RESOLUTION NEEDS TO BE CLARIFIED

26. The power to resolve disputes between RPCs should be assigned to the NCC. Many times the frequencies for a large system, such as NYSWCN, need to be

¹¹ *Report and Order*, FCC 98-191 at ¶ 56

coordinated through multiple RPCs. Occasionally, disputes will occur. If the dispute is not resolved in a timely and accurate fashion, valuable resources and time will be sacrificed. To help alleviate this inevitable problem, NYSTEC believes that the Commission should clarify the role of the NCC in resolving conflicts between RPCs.

VIII. CONCLUSION

27. For the reasons contained herein, NYSTEC requests that the Commission reconsider and clarify its *Report and Order* pursuant to this petition.

Respectfully Submitted,

New York State Technology Enterprise Corporation (NYSTEC)

By:

Scott R. Leonard
Communications Group Manager
NYSTEC
75 Electronic Parkway
Rome, New York 13441