

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Commission Seeks Public Comment on) **ET Docket No. 02-135**
Spectrum Policy Task Force Report)

Comments of the Industrial Telecommunications Association, Inc.

The Industrial Telecommunications Association, Inc. (ITA) hereby respectfully submits its comments in response to the Commission's *Public Notice* (Notice) in the above-referenced matter.¹ The Notice seeks comment on the Spectrum Policy Task Force (Task Force) Report (Report) that was released November 7, 2002.² As discussed below, ITA believes the Commission should proceed with caution on many of the issues and suggestions that were included in the Task Force Report.

I. Statement of Interest

ITA is a Commission-certified frequency advisory committee coordinating in excess of 6,000 applications per year on behalf of applicants seeking Commission authority to operate business and industrial/land transportation radio stations on frequency assignments allocated between 30-900 MHz.

1 See, Commission Seeks Public Comment on Spectrum Policy Task Force Report, ET Docket No. 02-135, Public Notice, (rel. Nov. 25, 2002) (Public Notice).

2 See, Spectrum Policy Task Force Report, ET Docket No. 02-135, (rel. Nov. 7, 2002) (Report).

ITA enjoys the support of a broad membership including more than 3,500 licensed two-way land mobile radio communications users, private mobile radio service (PMRS) oriented radio dealer organizations, and the following trade associations:

Alliance of Motion Picture and Television Producers
Aeronautical Radio, Inc.
Associated Builders & Contractors, Inc.
Florida Citrus Processors Association
Florida Fruit & Vegetable Association
National Mining Association
National Propane Gas Association
National Ready-Mixed Concrete Association
National Utility Contractors Association
New England Fuel Institute
United States Telephone Association

In addition, ITA is affiliated with the following independent market councils: the Council of Independent Communication Suppliers (CICS), the Taxicab & Livery Communications Council (TLCC), the Telephone Maintenance Frequency Advisory Committee (TELFAC), and USMSS, Inc.

II. Background

On June 6, 2002, the Commission released a *Public Notice* announcing the creation of a Spectrum Policy Task Force, and solicited comments on a broad range of issues to advance spectrum policy.³ The Task Force subsequently held workshops covering the issues raised in the *Public Notice*, and released its Report to the Commission with findings and suggestions concerning spectrum management, for which the Commission is now seeking comments.⁴

³ See, Spectrum Policy Task Force Seeks Comment on Issues Related to Commission's Spectrum Policies, ET Docket No. 02-351, *Public Notice*, (rel. June 6, 2002).

⁴ *Id.* See also, Report. See also, Public Notice.

III. Discussion

ITA commends the Commission, and specifically the Task Force, for taking the monumental task of completing a comprehensive review of the Commission's spectrum management policies. In its Report, the Task Force touched on many facets of spectrum policy and made numerous suggestions for the Commission to consider when formulating future spectrum policy. ITA will limit its initial comments to two main topics: flexible use, including secondary markets and spectrum usage models; and interference avoidance. ITA would like to note that many of the suggestions in the Report are significant departures from current spectrum policy and ITA suggests that implementation by the Commission should be performed with great caution.

A. Flexible Use

Flexibility in the use of spectrum can lead to optimal spectral efficiency and the effective provision of services for licensees so long as rules and responsibilities are definitively defined before the first moment of operation. The Task Force states, "regardless of how or to whom particular rights are assigned, ensuring that all rights are clearly delineated is important to avoiding disputes, and provides a clear common framework from which spectrum users can negotiate alternative arrangements."⁵ There may be benefits to increasing flexibility and relying on the market, but regulation, through clear definitions, rights and responsibilities, will be needed to prevent a reoccurrence of the issues similar to that of the 800 MHz band, where the Commission and industry learned *ex post facto* that certain operations are unable to coexist in

⁵ See, Report p. 18.

close spectral and geographic proximity to others.⁶ As the Task Force notes in its Report, “the marketplace may not independently encourage...compatibility.”⁷ For the procurement of spectral efficiency, the Commission will also need adequate enforcement to accompany its mandates, especially if the applications of the spectrum will be used in a more flexible manner.

Public safety and many private wireless operations are used for safety-of-life operations and require a protected environment free of interference. ITA believes added flexibility could lead to more efficient spectrum use, but only with the necessary protection rules for adjacent channel and co-channel operations. As Motorola, Inc. (Motorola) states, “there should be sufficient flexibility to allow evolution of technology and services. However, flexibility must be properly balanced against the higher level need to protect users from interference and provide sufficient definition to attract investment.”⁸ Without users rights and responsibilities, distinctly defined, the rewards of flexible use will be fruitless in an interference-saturated operating environment. Furthermore, the rules need to be sufficiently enforced to make an impact and foster spectral efficiency.

1. Secondary Markets

Secondary markets lead to greater spectral efficiency by allowing entities access to currently unused spectrum that may not have been available otherwise. The Commission has

⁶ See generally, Improving Public Safety Communications in the 800 MHz Band Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, WT Docket No. 02-55, Consensus Reply Comments, *Reply Comments*, (rel. Aug. 7, 2002) (Consensus Plan).

⁷ See, Report p. 22.

⁸ See, Spectrum Policy Task Force Seeks Public Comment on Issues Related to Commissions Spectrum Policies, ET Docket No. 02-135, Comments of Motorola, Inc., *Comments*, (rel. July, 8, 2002) at p. 3. (Motorola).

stated, “for secondary markets to operate effectively, licenses and spectrum users must have rights and responsibilities that clearly define and ensure their economic interests.”⁹

Stratex Network notes that secondary markets “would be particularly applicable for Point to Point applications as the long established, successful, frequency coordination process would make the spectrum use highly efficient, and would afford the protection from interference that is currently required by commercial operators.”¹⁰ ITA believes the combination of clearly-defined rights, responsibilities, and frequency coordination procedures for operations in secondary markets could be beneficial to numerous services, including private land mobile radio (PLMR) services. Much of the Report focused on allowing licensees more flexibility centered on spectrum management models of less regulatory control of spectrum bands and licensees. The use of secondary markets with prior coordination of use and an enforcement-focused regulation model, could fulfill one of the fundamental suggestions of the Task Force. The goal of flexibility through secondary markets becomes difficult, however, with an inappropriate spectrum use model.

Spectrum used more efficiently can lead to greater access by other users. By permitting secondary markets to thrive with proper coordination and enforcement protections, the Commission would be balancing spectrum efficiency with the critical need to protect vital private land mobile operations. Under such a scenario, each industrial/business user would be

⁹ See, Promoting Spectrum Through Elimination of Barriers to the Development of Secondary Markets, WT Docket No. 00-230, *Notice of Proposed Rulemaking*, (rel. Nov. 27, 2000) at ¶ 12. (Secondary Markets).

¹⁰ See, Spectrum Policy Task Force Seeks Public Comment on Issues Related to Commission’s Spectrum Policies, ET Docket No. 02-135, Comments of Stratex Networks Inc., *Comments*, (rel. July 7, 2002) at p. 7.

required to balance the need to operate at maximum safety and the market demand to operate at maximum efficiency.

2. Spectrum Usage Models

The Task Force Report noted the importance of each of three spectrum use models and compared, explained and recommended the most appropriate applications of each. The Task Force suggested that the Commission “base its spectrum policy on a balance of the three basic spectrum rights models...Thus, for any given spectrum band or proposed use, the Commission may find it beneficial to incorporate elements from more than one model.”¹¹ ITA agrees that one model will not fit the needs of all different types of users. Instead, all three of the spectrum usage models should be used in different areas and in some instances more than one model could be melded together to form the best overall spectrum management policy.

ITA believes the Commission inadvertently omitted private wireless licensees as a classic example of licensees requiring a command-and-control regulatory structure. Although public safety licensees were considered such a case, private wireless licensees were not. The public interest would best be served if the Commission grouped PMRS service, due to the very nature of the public services they provide, under a command-and-control spectrum use model.

The Report states, “command-and-control regulation should be reserved only for spectrum uses that provide clear, non-market public interest benefits or that require regulatory prescription to avoid market failure.”¹² Private wireless communications clearly provide non-market public interest benefits. Examples of private wireless licensees include airline, manufacturers, farmers and courier services (whether via land, air, sea or rail), just to name a

¹¹ See, Report p. 37.

few. Safe air traffic and quality food production are two examples of the inherent public interest benefit of PMRS communications. Furthermore, safe and seamless production and delivery of goods is another. Private internal communications make these daily interactions possible.

The communications systems, themselves, do not generate revenues, which may result in market failure for these types of services. If private wireless licensees had to respond to market demands for internal communications equipment, business users would be forced to use commercial services that are less reliable, more costly, not internally maintained, sometimes non-intrinsically safe and non-compliant with OSHA regulations.

The Commission needs to be cognizant, therefore, that spectrum policies that are entirely market focused may not adequately protect and preserve necessary and fundamental PMRS communications. The market value of private, internal communications systems is difficult to determine because these communications are so interrelated with other operations and the system, alone, does not accrue profit. One example of this would be an oil pipeline company. Their communications systems keep the workers safe, keep the public safe, generate oil flow to the market and to consumers, and so forth. There is no specific market value put on the communications that enable these things to happen. If an exclusive use model was applied through auction and private internal communication was needed in one of the major markets, the pipeline companies may not have new channels available because the market price of the spectrum would be too expensive. In the same region, a commons model approach could result in additional overcrowding, further limiting geographic and spectral options, while possibly introducing harmful degradation to its system. The exclusive use model *may* facilitate a

¹² See, Report p. 41.

secondary market, but the command-and-control model would guarantee interference-free operations with the same chance of fostering a secondary market under necessary regulations.

Furthermore, the services these types of internal communications provide, cannot be put at a risk of loss at a spectrum auction through an exclusive use model. While in some cases the market will meet the communications needs of businesses, consumers, and the public, the market fails to meet those needs in many others, requiring the Commission to use its regulatory authority. We understand that the command-and-control model of spectrum management is difficult for realizing economic efficiencies, but more importantly, it is in the public interest for safety applications. ITA recommends that the command-and-control spectrum usage model should continue to be used for all PMRS operations.

Over the last couple years we have seen the importance of private entities contributions in emergency situations and in aiding emergency workers. All communications used for safety-of-life operations, alone or in conjunction with public safety operations, need to be protected from the possibility of harmful interference. ITA urges the Commission to recognize that safety-of-life operations and those operations used in conjunction with public safety operations should be regulated under a command-and-control model to keep the public safe. Many public and private organizations alike use wireless communications, not as their core business, but to keep their employees and the public-at-large out of danger. In these instances, the safety and very lives of the public cannot depend on operations in unregulated bands. The Commission should first protect these critical operations with a command-and-control spectrum usage model, then seek ways to maximize efficiency through flexibility and specifically secondary markets.

B. Interference Avoidance

When discussing flexibility, the inevitable, logical progression of the topic would be to note the interference issue, as the Commission has done. Interference is at best disruptive, and at worst, deadly. ITA understands the importance of finding a policy that would eliminate or at least mitigate the possibility of interference.¹³ The Task Force suggested, “developing a ‘best practices’ handbook – a compendium of available information broadly relating to interference management.”¹⁴ ITA believes a “best practices” guide, similar to what was submitted, as an *ex parte* filing of the Consensus Plan, with specific rules on avoiding and resolving interference for the specific environment that a licensee operates in, would be very beneficial.¹⁵ Furthermore, these types of rules would ease pressure on the Commission if all possible scenarios and resolutions were theoretically created and resolved before they occur.

The Task Force, as one of its long-term strategies, suggests that

“the Commission shift its current paradigm for assessing interference – based on transmitter operations – toward operations using real-time adaptation based on the actual RF environment through interactions between transmitters and receivers...and adopt a new metric, ‘interference temperature,’ to quantify and manage interference.”¹⁶

ITA believes the possible advantages that may result from utilizing such an interference temperature, need to be measured against the possible disadvantages. “The Commission could

¹³ The last eighteen months we have been working on a comprehensive solution to address the interference problems in the 800 MHz band. *See generally*, Improving Public Safety Communications in the 800 MHz Band and Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, *Notice of Proposed Rule Making*, WT Docket No. 02-55 (rel. Mar. 15, 2002) (800 MHz NPRM). *See also*, Consensus Plan.

¹⁴ *See*, Report p. 32.

¹⁵ *See*, Improving Public Safety Communications in the 800 MHz Band Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, WT Docket No. 02-55, Supplemental Comments of the Consensus Parties, *Ex Parte Comments*, (rel. Dec. 24, 2002) at Appendix F (Supplemental Comments).

use the interference temperature metric to establish maximum permissible levels of interference, thus characterizing the ‘worst case’ environment in which a receiver would be expected to operate.”¹⁷ Interference can cause life-threatening situations for all different types of entities—fire and police departments, airlines, oil pipelines, and dockside operations—using their communications for safety-of-life operations for the public-at-large and their employees. Interference-free operations for these entities should be more important than maximum spectral capacity at all times. Motorola notes, “all systems require some degree of margin to ensure reliable communications. This margin is intentionally part of the system design because reliability is subject to the vagaries of propagation and other environmental variations. Commission analysis should not assume that eliminating that margin is acceptable.”¹⁸ ITA is concerned that communications made in a “worst case” or “absolute interference” environment, without the margin for additional random interference, could lead to dangerous situations that jeopardize the safety of the public.

An interference temperature may allow the most possible operations in one band at one time, but ITA believes such a scenario could only be achieved at the high cost of interference. The threat of interference has to be balanced against two competing theoretical ideas. On one side, the safety of the public, which is met when safety-of-life operations are functioning without any threat of interference. On the other, the most economical solution would be to increase the threat level of interference and allow the maximum number of operations on a specified amount of bandwidth. From the current 800 MHz proceeding before the Commission, we have learned

¹⁶ See, Report at p. 27.

¹⁷ See, Report at p. 29.

¹⁸ See, Motorola at p. 18.

that it is very difficult to resolve interference issues that cover significant portions of spectrum after the fact.¹⁹ ITA believes the use of an interference temperature permitting an absolute interference environment in private land mobile services needs to be met with extensive studies and slow implementation, so that we would not be doomed to repeat the problems associated with the 800 MHz band proceeding.

IV. Conclusion

ITA applauds the Commission and the Task Force for initiating a process to develop a more comprehensive record on the future of spectrum policy. ITA supports the over-arching objective of these proceedings, to increase spectral efficiency for all types of services. ITA's hesitation can be found in the implementation of such significant changes to the current policies for critical communications systems. However, flexibility of use including the development of secondary markets could be beneficial if used with the appropriate regulatory controls. Clearly defined rights, responsibilities and proper coordination for current and future spectrum users may lead to less interference and greater spectral efficiency.

As noted above, there are trade-offs associated with many of the suggestions made by the Task Force and we urge the Commission to weigh these risks carefully and proceed with caution. ITA looks forward to working the Commission on these issues in the future.

¹⁹ *See generally*, 800 MHz NPRM.

Respectfully submitted,

INDUSTRIAL TELECOMMUNICATIONS
ASSOCIATION, INC.
1110 N. Glebe Road, Suite 500
Arlington, Virginia 22201
(703) 528-5115

By: /s/ Jeremy Denton

Jeremy Denton
Director, Government Affairs

/s/ Robin Landis

Robin Landis
Regulatory Affairs Assistant

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CERTIFICATE OF SERVICE

I, Robin Landis, do hereby certify that on the 27nd day of January 2003, I forwarded to the parties listed below a copy of the foregoing Comments of the Industrial Telecommunications

Association, Inc. via hand delivery :

Brian Tramont, Esq.
Senior Legal Advisor
Office of Chairman Michael K. Powell
445 12th Street, SW, 8-B201
Washington, DC 20554

Jennifer A. Manner, Esq.
Senior Legal Advisor
Office of Commissioner Kathleen Q. Abernathy
445 12th Street, SW, 8-A204
Washington, DC 20554

Barry Ohlson, Esq.
Interim Legal Advisor
Office of Commissioner Jonathan S. Adelstein
445 12th Street, SW, 8-B115
Washington, DC 20554

Thomas J. Sugrue, Esq.
Chief, Wireless Telecommunications Bureau
445 12th Street, SW, Room 3-C252
Washington, DC 20554

D'wana R. Terry, Esq.
Chief, Public Safety & Private Wireless
Division
Wireless Telecommunications Bureau
445 12th Street, SW, Room 4-C321
Washington, DC 20554

Sam Feder, Esq.
Legal Advisor
Office of Commissioner Kevin J. Martin
445 12th Street, SW, 8-C302

Washington, DC 20554

Paul Margie, Esq.
Legal Advisor
Office of Commissioner Michael J. Copps
445 12th Street, SW, 8-A302
Washington, DC 20554

Kathleen Ham, Esq.
Deputy Chief
Wireless Telecommunications Bureau
445 12th Street, SW, Room 3-C255
Washington, DC 20554

Mr. Herbert W. Zeiler
Deputy Chief, Public Safety & Private
Wireless Division
Wireless Telecommunications Bureau
445 12th Street, SW, Room 4-C343
Washington, DC 20554

Marlene H. Dortch, Esq.
Secretary
445 12th Street, SW, Room TW-325
Washington, DC 20554

Ramona E. Melson, Esq.
Deputy Chief, Public Safety & Private
Wireless
Division
Wireless Telecommunications Bureau
445 12th Street, SW, Room 4-C237

Peter Tenhula
Federal Communications Commission
445 12th St., SW, Room 2-C343

Washington, DC 20554

Washington, DC 20005

Stratex Networks, Inc.
c/o Ronald D. Coles
3103 Surber Ct.
Fredericksburg, VA 22408

/s/ Robin Landis _____
Robin Landis

Qualex International
Portals II
445 12th St. SW, Room CY-B402
Washington, DC 20554

Steve B. Sharkey
Robert D. Kubik
Motorola, Inc.
1350 I Street, NW