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 WIRELESS USERS GROUP
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FEDERAL COMMUNICATIONS COMMISSION
 OFFICE OF THE SECRETARY

September 25, 2000

Magalie Roman Salas
 Secretary
 Federal Communications Commission
 TW-A325
 445 Twelfth Street, SW
 Washington, DC 20554

Re: Comments, In the Matter of the Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, Fourth Notice of Proposed Rule Making, in WT Docket No. 96-86

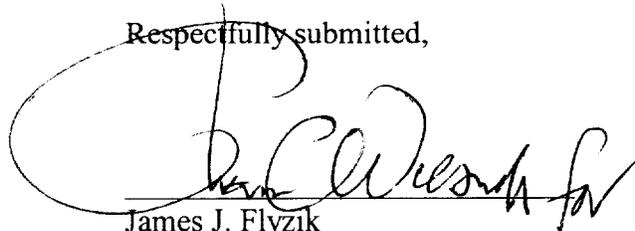
Dear Ms. Salas:

On behalf of the Federal Law Enforcement Wireless Users Group (FLEWUG) and pursuant to Section 1.419 of the Commission's rules, 47 C.F.R. § 1.419 (1999), enclosed herewith for filing are an original and four (4) copies of the FLEWUG's Comments in the above-referenced proceeding.

Kindly date-stamp the additional, marked copy of this cover letter and return it in the envelope provided.

Should you require any additional information, please contact the undersigned.

Respectfully submitted,



James J. Flyzik
 Deputy Assistant Secretary
 (Information Systems), and
 Chief Information Officer,
 Department of the Treasury, and
 Vice Chair, Government Information Technology
 Services Board

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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Technical and Spectrum Requirements)
For Meeting Federal, State and Local)
Public Safety Agency Communication)
Requirements through the Year 2010)
)

WT Docket No. 96-86

To: The Commission

COMMENTS TO THE FOURTH NOTICE OF PROPOSED RULEMAKING

Filed by: The Federal Law Enforcement Wireless Users Group

Date: September 25, 2000

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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

**COMMENTS OF THE FEDERAL LAW ENFORCEMENT WIRELESS USERS GROUP
IN RESPONSE TO THE FOURTH NOTICE OF PROPOSED RULEMAKING**

1. The Federal Law Enforcement Wireless Users Group (FLEWUG)¹ respectfully submits the following Comments in response to the Commission’s Fourth Notice of Proposed Rulemaking (NPRM) in the above-styled proceeding.

2. An important aspect of the FLEWUG’s mission is to develop a plan to facilitate coordination between public safety agencies at all levels of government in responding to emergency situations and in so doing, maximize these agencies’ ability to protect life and property. Any developments affecting public safety communications, particularly those related to use and management of the 24 megahertz (MHz) of recently reallocated spectrum in the 764-776 and 794-806 MHz bands (“The 700-MHz Band”), significantly interest the FLEWUG.

¹ The FLEWUG is composed of law enforcement and public safety officials from the Department of the Treasury, Department of Justice, Department of the Interior, Department of Agriculture, Department of Defense, Department of Health and Human Services, United States Postal Service, United States Postal Inspection Service, National Telecommunications and Information Administration, Federal Emergency Management Agency, Internal Revenue Service, Federal Bureau of Investigation, United States Secret Service, United States Coast Guard, United States Capitol Police, Drug Enforcement Administration, United States Park Police, Immigration and Naturalization Service, United States Customs Service, Bureau of Alcohol, Tobacco, and Firearms, United States Mint, National Communications System, Defense Information Systems Agency, National Security Agency, Federal Law Enforcement Training Center, Bureau of Engraving and Printing, United States Marshals Service, National Institute of Standards and Technology, United States Forest Service, United States Fish and Wildlife Service, Federal Bureau of Prisons, Bureau of Land Management, and National

Given its mission, the FLEWUG has a clear interest in the proceedings related to the development of rules and procedures governing the 2.6 MHz of this spectrum designated for interoperability. For this reason, the FLEWUG has participated directly in the activities of the Public Safety National Coordination Committee (NCC) since the NCC's inception, including development of the recommendations from its first year of NCC activity that are the basis for the Fourth NPRM. Accordingly, the FLEWUG is pleased to offer these Comments to the Fourth NPRM to further facilitate the Commission's development of final rules based on the foundation provided by the input of the NCC and other parties.

3. Specifically, the FLEWUG intends to address the following areas in its commentary: guard channels, including proposed channel pairing, channel allocation plans, and adjacent channel interference; administration of the interoperability channels, including subscriber equipment licensing; channel designation and access priority, including state authority to resolve priority issues; technical standards, including narrowband voice standards, channel efficiency standards for narrowband channels, as well as narrowband low-speed data transmission standard and channel reservation; encryption; and the use of the Pre-Coordination Database (PCDB) now under development by the National Institute for Justice (NIJ) in conjunction with the NCC.

GUARD CHANNELS

A. Proposed Channel Pairing

4. The FLEWUG notes that Ericsson, Inc. (Ericsson) has proposed a rearrangement of the interoperability channel plan from 32 pairs of two contiguous 6.25 kilohertz (kHz) channel sets (12.5 kHz) to 16 pairs of four contiguous 6.25-kHz channel sets (25 kHz). The NCC supported the Ericsson proposal stating that under its plan, guard channels would not be needed. The NCC further stated that if the Ericsson plan is not adopted, the Commission should consider another proposal. In this latter proposal, the NCC recommended preserving the two contiguous 6.25-kHz reserve channels immediately below the ten 12.5-kHz interoperability channel sets as guard bands. With this construct, the NCC pointed out that users could combine the guard channels with certain interoperability channels to form 25-kHz channel blocks.

5. The Commission tentatively decided not to support the Ericsson proposal. The Commission believed that the groups of the four contiguous channel groups would generate additional adjacent channel interference. As an alternative, the Commission has tentatively concluded that the better solution would be to designate the two contiguous reserve pools of 6.25-kHz channels (12.5 kHz) either above or below each 12.5-kHz interoperability channel set.

6. The FLEWUG does not anticipate that aggregating four contiguous channels into a single “channel set” will result in the transmitter causing any increase in interference levels appearing in the next adjacent 6.25 kHz channel to any greater extent than may result from a operation on a single 6.25 kHz channel. The FLEWUG further notes that a revised band plan, approved by the NCC Technology Subcommittee and forwarded to the Steering Committee at its June 2000 meeting, assigns four contiguous 6.25 kHz channels to comprise each interoperability channel set. The center channels of each set comprise the 12.5 kHz interoperability channel, with 6.25 kHz channels on either side serving as guard channels when the 12.5 kHz channel is used. Under the modified NCC plan, the entire channel set may also be aggregated to form a single 25 kHz channel. The FLEWUG advises the Commission to adopt this modified version of the original NCC recommended plan.

B. Channel Allocation Plans

7. The Commission has sought comments concerning how to accommodate 25-kHz operations and on the allocation of the temporary guard channels. As noted in the Fourth NPRM, Ericsson suggested moving interoperability channels next to each other to eliminate the need for guard channels; immediately designating those channels for interoperability where trunking is permitted, thus allowing the aggregation of 25-kHz bandwidths; and allocating all these channels for interoperability use, thus doubling the number of channels. The FLEWUG has not conducted a technical evaluation of this proposal. However, inasmuch as Ericsson’s proposal represents a substantial departure from conventional channel plans, the FLEWUG urges the Commission to carefully consider Comments or other filings on this docket that may be forthcoming from organizations with specialized expertise that are positioned to undertake technical evaluations of the proposal. The FLEWUG requests the Commission to consider any recommendations,

including alternative proposals, that such organizations may offer to support or modify the Ericsson plan.

C. Adjacent Channel Interference

8. The Commission has requested comment on adjacent channel interference that may be caused by the interoperability channels being grouped by fours and the need to provide 25-kHz aggregated blocks of spectrum on all interoperability channels or only those where secondary trunking is permitted. As discussed above, the FLEWUG requests that the Commission carefully consider input from parties providing scientific or technical evaluations, particularly those supported by field test data or other direct observation.

9. In addressing the issue of interference, and as discussed in greater detail in the section discussing receiver protection standards below, the FLEWUG once again wishes to highlight, as it has in numerous other proceedings² the necessity of establishing receiver protection standards for public safety equipment. Regardless of the channel plan adopted, the FLEWUG urges the Commission to incorporate such standards in its rulemaking process.

ADMINISTRATION OF THE INTEROPERABILITY CHANNELS

A. Subscriber Equipment Licensing

10. The NCC has recommended that the Commission license both mobile and portable subscriber equipment to avoid any abuse of the interoperability channels. In the Fourth NPRM, the Commission indicated that blanket licensing of all public safety licensees to authorize mobile operation seems to achieve both the goals of interoperability during disasters and the use of authorized equipment in the 700-MHz band. The Commission has proposed to permit an entity to operate without an individual license if the entity is eligible to hold a 700-MHz band license or the entity is otherwise licensed under Part 90 of the Rules.

² See, e.g., FLEWUG Reply Comments in response to Comments filed by other parties regarding the Commission's Notice of Inquiry, *In the Matter of Inquiry Regarding Software Defined Radios*, ET Docket No. 00-47, July 17, 2000, at Para. 17.

11. The FLEWUG is concerned that, unless equipment is licensed directly by the Commission, potential problems could arise in the areas of equipment accountability and security. In contrast, provided that appropriate equipment licensing procedures and interoperability plans are developed and adhered to, the FLEWUG does not see blanket licensing as providing a corresponding benefit to operations in the 700-MHz interoperability spectrum. Accordingly, the FLEWUG expresses its concurrence with the original NCC proposal and urges the Commission to require individual rather than blanket licensing.

12. The FLEWUG also observes that maintaining individual licensing of base and mobile equipment within the Public Safety Pool would obviate the need to amend Sections 90.179 and 90.421 of the Commission's Rules pertaining to the operation of mobile units in vehicles not under the control of the licensee.³

CHANNEL DESIGNATION AND ACCESS PRIORITY

A. Access Priority

13. The NCC has recommended that priority access be implemented in the 700-MHz interoperability spectrum only in critical situations where the higher priority party would gain access to the channel while the lower priority party would have to cease communications.

The NCC has advised the Commission to adopt the following priority levels:

Level 1—Disaster and extreme emergency operations for mutual aid and interagency communications

Level 2—Emergency or urgent operations involving imminent danger to life or property

Level 3—Special event control, generally preplanned (including task force operations)

Level 4—Single agency secondary communications (default priority).

14. The Commission noted that the Priority Access Service (PAS) priority levels differ from those proffered by the NCC and has sought comment on whether the priority levels should be different for the commercial mobile radio service (CMRS) providers and on whether the levels should be modeled on the PAS levels adopted by the Commission pursuant to the Second Report

³ 47 C.F.R. §§ 90.179 and 90.421 (1999).

& Order.⁴ The FLWEUG notes that the CMRS operational environment is fundamentally different from that contemplated by the NCC in its recommendations. In contrast to the routine command and control functions envisioned under the current CMRS rules, the NCC priority access levels maximize effective control of the public safety interoperability spectrum during a multi-agency response incident. Moreover, because CMRS providers will not be operating using the public safety interoperability spectrum, the FLEWUG feels that the difference in CMRS operating rules and the NCC priority access levels will not be likely to cause any confusion. The FLEWUG reinforces its conviction that the priority access levels currently envisioned by the NCC are necessary and appropriate and urges the Commission to adopt them as drafted.

B. State Authority to Resolve Priority Issues

15. The Commission has tentatively concluded that the states are better determinants of priority use and dispute resolution. The FLEWUG generally agrees that these issues require involvement at the state level with some oversight. at the national level. The FLEWUG generally supports the idea that the states, or if the states are unwilling, some agency with state-delegated authority, should have the authority to resolve disputes in conjunction with Regional Planning Committee (RPC) activity. However, the FLEWUG cautions that a certain measure of standardization should also be built in to allow interstate, interregional, and nationwide operating schemes as required by operational demands, and to permit co-equal access and sharing agreements.⁵ For this reason, the FLEWUG supports establishment of State Interoperability Executive Committees (SIEC), as further recommended by the NCC, to assist the RPCs and states in such coordination efforts.

TECHNICAL STANDARDS

A. Narrowband Voice Standards

16. Initially the Commission designed the 700 MHz spectrum channel plan based on 6.25-kHz channel spacing and therefore declined to adopt the Project 25 Phase I standard. The NCC

⁴ See, generally, Second R&O, WT Docket No. 96-86, rel. July 13, 2000.

and other entities have subsequently informed the Commission that the technology required to operate on a 6.25-kHz channel has not yet reached the market. The Association of Public-Safety Communications Officials-International, Inc. (APCO) has stated that Project 25 Phase II, now under development, will be a 6.25-kHz standard and backward compatible to the current Project 25 phase I standard so it could be implemented immediately without any increase in cost. The NCC had recommended to the Commission that the Project 25 Phase I standard should be adopted as the digital voice standard instead of the European Terrestrial Trunked Radio (TETRA) standard because of the low power in TETRA radios and because TETRA has not been approved by the American National Standards Institute (ANSI). The NCC did not recommend Phase II because the timetable for developing this standard is still uncertain. Based on the NCC recommendation, the Commission has tentatively concluded that it will adopt the NCC recommendation regarding the adoption of Project 25 Phase I pending development of viable 6.25-kHz technology. The FLEWUG fully supports this course of action and rationale, citing the concerns of the NCC and the Commission that efficient use of spectrum should be balanced against practical, cost-effective solutions for public safety.

17. Regarding a timeline for the migration to 6.25 kHz, the FLEWUG notes that such a timeline will largely be a function of vendor development of compatible and affordable equipment to operate using a 6.25-kHz channel. Informal inquiries of vendors at NCC meetings last year indicated that such technology was at least 2 years away.⁶ The FLEWUG therefore cautions the Commission that, although it will ultimately be necessary to fix a “date certain” for 6.25-kHz migration, be it 2010 or later, the Commission should refrain from establishing a deadline at this time. Establishing the deadline now would more than likely result in an unsupportable mandate to the public safety community, which would then have to reopen consideration of the migration issue once a practicable transition timeline could be established between the user and vendor communities.

18. In light of this, the FLEWUG believes that the policy contemplated by the NCC, and tentatively accepted by the Commission, of endorsing and proactively monitoring the development of transition technology and continuing to ensure backwards compatibility, is the timely and proper course of action at this time.

⁵ See FLEWUG Ex Parte Comments, WT Docket No. 96-86, September 16, 1999.

B. Narrowband Channel Efficiency Standards

19. As detailed in the Fourth NPRM, there has been some debate regarding the channel efficiency standard of data throughput of 4.8 kilobits per second (kbps) per 6.25 kHz initially established by the Commission pursuant to Project 25 Phase I. Without addressing the individual details of this issue, the FLEWUG reinforces its longstanding support for Project 25 Phase I in its entirety.⁷ Nearly 2 years ago, the FLEWUG, as did the NCC in preparing its recommendations to the Commission, voted to adopt the ANSI/Telecommunications Industry Association (TIA)/Electronics Industry Alliance (EIA) 102 (Project 25 Phase I), including the ANSI/TIA/EIA 102 BAAA-1998 Frequency Division Multiple Access (FDMA) Common Air Interface (CAI) standard and the ANSI/TIA/EIA102.BABA-1998 Vocoder Description standard as the digital interoperability standard for radio communications.⁸ Having seen no evidence to compel the conclusion that the original Project 25 Phase I standard, which was the result of 10 years of rigorous testing and evaluation, is in any way deficient, the FLEWUG would oppose any deviation from the original standard.

C. Narrowband Low-Speed Data Channel Reservation

20. The Commission agreed with the NCC recommendation to reserve two interoperability channels for data transmission. The FLEWUG expresses its concurrence with this conclusion, but cautions that, given the high demand for voice traffic in the 700 MHz band, it is essential that only two channels be reserved for data usage. The FLEWUG reminds the Commission of the necessity of allocating additional spectrum pursuant to the Public Safety Wireless Advisory Committee (PSWAC) recommendations for other services, e.g., wideband data, rather than attempting to overburden the 24 MHz of spectrum 700-MHz band that will be essential for voice and narrowband data applications.⁹

⁶ NCC Technology Subcommittee meeting, New York, NY, November 18, 1999.

⁷ See, e.g., FLEWUG Ex Parte Comments, WT Docket Nos. 96-86 and 99-168, December 10, 1999, at Para. 18.

⁸ See FLEWUG Petition for Reconsideration and Clarification, WT Docket No. 96-86, December 2, 1998, at Para. 33.

⁹ See, e.g., FLEWUG Comments on the Commission's Notice of Proposed Rulemaking, *In the Matter of the 4.9 GHz Band Transferred from Federal Government Use*, April 26, 2000, Paras. 5-9.

D. Narrowband Low Speed Data Transmission Standard

21. The NCC had suggested that the Commission adopt the Project 25 standard for narrowband data transmission, which requires the use of a 12.5-kHz channel. As detailed above, the FLEWUG remains committed to the adoption and implementation of the Project 25 Phase I suite of standards for public safety and accordingly concurs with the NCC's recommendation.

22. The Commission has further proposed that all subscriber units designed for data only not be required to have voice capabilities, and conversely all subscriber units designed for voice only not be required to have data capabilities. The FLEWUG does not object to the Commission's proposal.

E. Encryption

23. The Commission agreed with the NCC, which stated that the public safety community is increasingly using encryption and cited the need for a single standard. The NCC recommended adopting the latest federal standard. The FLEWUG states that for interoperability purposes, all Project 25 equipment utilizing Type 3 encryption shall be capable of operation using the Data Encryption Standard (DES), or an encryption algorithm compatible with the DES, such as the Triple Data Encryption Algorithm (TDEA or "Triple-DES") using Keying Option 3 (a key bundle wherein all keys are identical), currently being planned for deployment by a number of users depending on equipment availability. The federal user community plans to eventually transition from the analog DES to the Advanced Encryption Standard (AES).

F. Receiver Standards and Interfaces

24. In the First Report and Order, the Commission indicated that the quality and cost of receivers was best left to the market to determine and directed the RPCs to establish reference values for adjacent channel selectivity, spurious response attenuation, and intermodulation rejection in their plans. The NCC has included recommending parameters for receiver standards in its second year work plan.

25. In the Second Memorandum Opinion and Order, the Commission further remarked that receiver standards could improve reliability of critical public safety communications and acknowledged that such standards may be necessary. The Commission noted that it had received an increasing number of complaints regarding interference in the 800-MHz public safety band. Mobile and portable radios failed to function properly near CMRS towers.

26. As stated above, the FLEWUG, based on the evaluations of the NTIA, is convinced that the interests of public safety and commercial licensees would be served by establishing receiver standards in the 700 MHz band. The FLEWUG believes that receiver protection standards will be necessary to protect public safety equipment from harmful interference, noting the firm conviction of the public safety community that no interference for even a brief period of time is acceptable. Based on the experiences of the public safety user community, such as those cited generally by the Commission in the NPRM, the FLEWUG observes that interference could come from any number of sources, including CMRS and commercial cellular providers. This interference would be difficult, if not impossible, to identify and address on a real-time basis. Currently within the NCC, ANSI/TIA/EIA TSB102.CAAB-1994 Digital C4FM/CQPSK Transceiver Performance Standard is under consideration for the receiver standard in the 700 MHz band. This receiver standard would apply to all fixed, mobile, voice, and data equipment used with channel bandwidths of 25 kHz, 12.5 kHz, and 6.25 kHz within the 764-776 MHz and 794-806 MHz bands. The FLEWUG strongly urges the Commission to mandate receiver standards for all public safety equipment to be used in the 700-MHz band.

PUBLIC SAFETY PRE-COORDINATION DATABASE

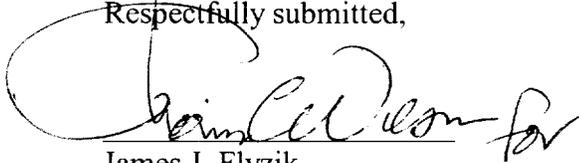
27. The NCC has recommended developing a PCDB, funded by the NIJ, for the 700-MHz public safety band. The RPCs would use the PCDB to select interoperability channels to avoid co-channel and adjacent channel interference. The FLEWUG urges the Commission to carefully consider its tentative decision not to require use of the PCDB in favor of allowing entities administering the interoperability system to determine whether a PCDB should be required, and, based on the input of potential users, make a determination either not to establish the PCDB or to require participation. Noting the experience of its members, the FLEWUG observes that without mandatory participation, it is unlikely that the PCDB could be successfully implemented.

SUMMARY AND CONCLUSION

28. The FLEWUG supports the adoption of the modified NCC channel pairing plan, and urges the Commission to carefully consider technical input regarding how to accommodate 25-kHz operations, particularly input regarding data-supported evaluations pertaining to adjacent channel and other interference.
29. The FLEWUG renews its conviction that the Commission must establish receiver protection standards for public safety equipment to ensure that public safety users are not subjected to harmful interference for any duration or to any extent.
30. The FLEWUG agrees with the current NCC proposal to require individual rather than blanket licensing.
31. The FLEWUG endorses the priority access levels currently propounded by the NCC and advises the Commission to adopt them as drafted.
32. The FLEWUG concurs with the idea that states, or entities with state-delegated authority, should have the authority to resolve disputes provided that a necessary level standardization is incorporated to facilitate nationwide interoperability, including establishment of SIECs.
33. The FLEWUG believes that the 6.25-kHz migration policy, developed by the NCC and currently contemplated by the Commission, is the correct course of action at this time. The FLEWUG continues to advocate adoption of Project 25 Phase I interoperability standards exclusively.
34. The FLEWUG does not object to the Commission's proposal that subscriber units designed for data only not be required to have voice capabilities, and that subscriber units designed for voice only not be required to have data capabilities.
35. The FLEWUG identifies DES as the current encryption algorithm for the federal community but notes that users will eventually migrate to AES.
36. The FLEWUG advises the Commission to carefully consider the implications of permitting, but not mandating the use of, the PCDB.

37. The FLEWUG acknowledges the efforts of the NCC and other parties in developing the recommendations set forth in the Fourth NPRM and requests the Commission to consider its Comments as set forth above in light of the Comments of others.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James J. Flyzik", written over a horizontal line.

James J. Flyzik
Deputy Assistant Secretary
(Information Systems), and
Chief Information Officer,
Department of the Treasury, and
Vice Chair, Government Information Technology
Services Board

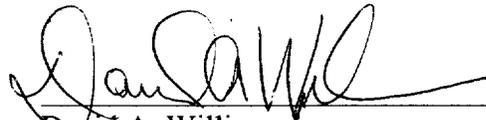
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)

CERTIFICATE OF SERVICE

I, David A. Williams, Senior Associate, Booz·Allen & Hamilton Inc., 8283 Greensboro Drive, McLean, Virginia, 22102-3838, hereby certify that on this date I caused to be served, by first-class mail, postage prepaid (or by hand where noted) copies of the Federal Law Enforcement Wireless Users Group's Comments in response to the Commission's Fourth Notice of Proposed Rulemaking regarding the Commission's Notice of Proposed Rulemaking, *In the Matter of the Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010*, the original of which is filed herewith and upon the parties identified on the attached service list.

DATED at Fair Oaks, Virginia this 25th day of September 2000.


David A. Williams

SERVICE LIST

*The Honorable William E. Kennard, Chairman
Federal Communications Commission
445 12th St., SW, Rm. 8-B201
Washington, DC 20054

*The Honorable Harold Furchgott-Roth, Commissioner
Federal Communications Commission
445 12th St., SW, Rm. 8-A302
Washington, DC 20054

*The Honorable Susan Ness, Commissioner
Federal Communications Commission
445 12th St., SW, Rm. 8-B115
Washington, DC 20054

*The Honorable Michael Powell, Commissioner
Federal Communications Commission
445 12th St., SW, Rm. 8-A204
Washington, DC 20054

*The Honorable Gloria Tristani, Commissioner
Federal Communications Commission
445 12th St., SW, Rm. 8-C302
Washington, DC 20054

*Clint Odom, Legal Advisor
Office of Chairman Kennard
Federal Communications Commission
445 12th St., SW, Rm. 8-B201
Washington, DC 20054

*Paul E. Misener, Senior Legal Advisor
Office of Commissioner Furchgott-Roth
Federal Communications Commission
445 12th St., SW, Rm. 8-A302
Washington, DC 20054

*Daniel Connors, Legal Advisor
Office of Commissioner Ness
Federal Communications Commission
445 12th St., SW, Rm. 8-B115
Washington, DC 20054

*Peter A. Tenhula
Office of Commissioner Powell
Federal Communications Commission
445 12th St., SW, Rm. 8-A204
Washington, DC 20054

*Karen L. Gulick
Office of Commissioner Tristani
Federal Communications Commission
445 12th St., SW, Rm. 8-C302
Washington, DC 20054

*Thomas J. Sugrue, Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th St., SW, Rm. 3-C252
Washington, DC 20054

*Kathleen O'Brien-Ham, Deputy Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th St., SW, Rm. 3-C207
Washington, DC 20054

*James D. Schlichting, Deputy Chief
Wireless Telecommunications Bureau
Federal Communications Commission
445 12th St., SW, Rm. 3-C207
Washington, DC 20054

*D'Wana R. Terry, Chief
Public Safety & Private Wireless Division
Federal Communications Commission
445 12th St., SW, Rm. 4-C321
Washington, DC 20054

*Ramona Melson, Chief Legal Counsel
Public Safety & Private Wireless Division
Federal Communications Commission
445 12th St., SW, Rm. 4-C321
Washington, DC 20054

*Herb Zeiler
Public Safety & Private Wireless Division
Federal Communications Commission
445 12th St., SW, Rm. 4-C321
Washington, DC 20054

*Jeanne Kowalski, Deputy Chief
Public Safety & Private Wireless Division
Wireless Telecommunications Bureau
445 12th St., SW, Rm. 4-C324
Washington, DC 20054

*Kris Monteith, Chief
Policy Division
Federal Communications Commission
445 12th St., SW, Rm. 3-C120
Washington, DC 20054

*Nancy Boocker, Deputy Chief
Policy Division
Federal Communications Commission
445 12th St., SW, Rm. 3-C120
Washington, DC 20054

*Stan Wiggins
Policy Division
Federal Communications Commission
445 12th St., SW, Rm. 3-C120
Washington, DC 20054

*Ed Jacobs
Policy Division
Federal Communications Commission
445 12th St., SW, Rm. 3-C120
Washington, DC 20054

*Steve Weingarten, Chief
Commercial Wireless Division
Federal Communications Commission
445 12th St., SW, Rm. 4-C207
Washington, DC 20054

*Jeff Steinberg, Deputy Chief
Commercial Wireless Division
Federal Communications Commission
445 12th St., SW, Rm. 4-C207
Washington, DC 20054

International Transcription Services, Inc.
1231 20th St., NW
Washington, DC 20037

***HAND DELIVERED**