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BEFORE THE
Federal Communications Commission
WASHINGTON, DC 20554

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Federal Communications Commission
Office of Secretary

In the Matter of

- Amendment of Part 90 of the Commission's Rules To Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service) PR Docket No. 89-552
RM-8506
- Implementation of Sections 3(n) and 332 of the Communications Act) GN Docket No. 93-252
- Regulatory Treatment of Mobile Services)
- Implementation of Section 309(j) of the Communications Act -- Competitive Bidding) PP Docket No. 93-253

REPLY OF ARCH COMMUNICATIONS GROUP, INC.

Pursuant to Section 1.429 of the Commission's rules, 47 C.F.R. § 1.429, Arch Communications Group, Inc. ("Arch"), submits the following reply in response to the oppositions to the petitions for reconsideration filed in the above-referenced dockets.¹

I. THE COMMISSION SHOULD EXEMPT PAGING OPERATIONS FROM THE SPECTRUM EFFICIENCY STANDARDS

In its Opposition, Arch supported the Petition for Reconsideration filed by ComTech Communications, Inc. ("ComTech") which urged the Commission, among

¹ *In the Matter of Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, Implementation of Sections 3(n) and 332 of the Communications Act, Regulatory Treatment of Mobile Services, Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, PP Docket No. 89-552, RM-8506, GN Docket No. 93-252 and PP Docket No. 93-253, Third Report and Order and Fifth Notice of Proposed Rulemaking, 62 Fed. Reg. 15978 (1997) ("Third R&O"). Arch filed an Opposition and Comments ("Opposition") to the Third R&O on June 4, 1997.*

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other things, to exempt paging operations in the 220 MHz band from the spectral efficiency standard adopted by the Commission.² This spectrum efficiency standard requires licensees in the 220 MHz band to employ equipment for data communications that operates at a data rate of at least 4,800 bits per second per 5 kHz of channel bandwidth (or .96 bits per second per hertz).³

ComTech correctly points out that adoption of this standard will have the effect of foreclosing data paging in the 220 MHz band in that it is almost four times more efficient than data paging's current state of the art maximum data rate of 6400 bits per second in a 25 kHz channel (or .256 bits per second per hertz) using the most efficient technology commercially available.⁴ Arch agrees with ComTech in that the establishment of an efficiency standard that precludes paging operations is in direct contravention of the Commission's decision in the *Third R&O* to allow 220 MHz licensees to operate paging systems on a primary basis to enable them "to compete more effectively in the wireless marketplace."⁵

Two parties opposed ComTech's proposal.⁶ INTEK opposed exempting data paging operations in the 220 MHz band, dismissing ComTech's very real concern that no viable data paging equipment currently exists for operation in this band as "speculative

² Arch Opposition at pp. 1-4; ComTech Petition at pp. 6-10.

³ See *Third R&O* at ¶¶ 113-116.

⁴ ComTech Petition at pp. 6-7; Arch Opposition at p. 2.

⁵ ComTech Petition at p. 6; Arch Opposition at p. 2, citing *Third R&O* at ¶ 95.

⁶ See Comments on Petitions for Reconsideration of INTEK Diversified Corp. ("INTEK") at pp. 4-7; Comments on Petitions for Reconsideration of SEA, Inc. ("SEA") at pp. 8-11.

and misplaced.”⁷ INTEK apparently ignores the same conclusion as to the state of the paging equipment industry provided by Glenayre Technologies, Inc. (“Glenayre”) in this proceeding.⁸ Glenayre, one of the world’s largest manufacturers of paging infrastructure equipment, states that “there is little value in setting a standard today which cannot be achieved for several years for a service which is operating today.”⁹

Both INTEK and SEA hold out Motorola’s InFLEXion protocol as an example of a technology currently available which data paging operations could use to meet the spectrum efficiency standard.¹⁰ Their reliance on the InFLEXion technology as a way for data paging operators to meet the standard is misguided. While InFLEXion has been touted for its promise to support high-speed data at sometime in the future, InFLEXion, as deployed today, provides only voice communications. According to Glenayre, “presently, there is no data equipment that meets the Commission’s 220 MHz data efficiency standard.”¹¹

Further, INTEK scolds ComTech for its “blanket statement” as to the paging equipment market, implying that paging technology meeting the increased spectrum efficiency standard for data operations in the 220 MHz band will “become available” by

⁷ INTEK Comments at pp. 4-5.

⁸ See Glenayre’s Petition for Partial Reconsideration at p. 5.

⁹ *Id.*

¹⁰ Comments of INTEK at p. 5 and SEA at pp. 10-11.

¹¹ Glenayre Petition at p. 5.

virtue of the mere adoption of such a standard by the Commission.¹² INTEK's assertions are wrong in that they not only ignore Glenayre's statements, as explained above, but also discount the limitations of one-way paging design. One-way paging systems operate in simulcast mode, whereas two-way dispatch technologies, which are also authorized on the 220 MHz band, typically operate in a single-transmitter mode. Arch submits that a simulcast system faces more significant design challenges in attempting to meet higher data rates, because as data rates are increased, interference is created among transmitters as signals start to cancel one another. The current maximum data rate of 6400 bits per second in a 25 kHz channel pushes the limits of practical radio frequency network design for paging using presently available technology.

Several parties support the phasing in of higher spectrum efficiency standards, with the current one-way paging standard of .256 bits per second per hertz as today's standard, with higher standards of 1 and 2 bits per second per hertz being required at five and ten years, respectively.¹³ Arch continues to oppose this proposal for the reasons stated in its Opposition.¹⁴

¹² INTEK Comments at p. 5.

¹³ See Glenayre Petition at pp. 5-6, as supported generally by Reply Comments of Police Emergency Radio Services, Inc. at p. 2.

¹⁴ See Arch Opposition at p. 3. Arch continues to oppose any increase in the maximum data rate for paging operations in the 220 MHz band, and thus, maintains its opposition to Rush Network, Corp.'s ("Rush") proposal to create a .768 bits per second per hertz standard by the year 2005. See Petition for Reconsideration and Petition for Clarification at pp. 3-4.

II. THE COMMISSION SHOULD MODIFY THE ERP LIMITS FOR PAGING BASE STATIONS IN THE 220 MHz BAND TO CONFORM TO THE ERP LIMITS CURRENTLY USED FOR VHF PAGING

ComTech and Glenayre proposed to conform the Commission's maximum permissible effective radiated power ("ERP") for 220 MHz nationwide stations to those found in the Commission's rules (*i.e.* 47 C.F.R. § 22.535) with regard to paging facilities in the VHF band.¹⁵ Arch wishes to clarify, however, that while it supports conforming the maximum ERP for all paging base stations in the 220 MHz band to VHF paging levels, it opposes any power increase for mobile transmitters.¹⁶

III. CONCLUSION

Arch requests that the Commission exempt paging operations in the 220 MHz band from the spectrum efficiency standards and modify the maximum ERP limits for paging base stations to conform them to rules governing VHF paging.

Respectfully submitted,

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¹⁵ See Petitions of ComTech at pp. 4-6 and Glenayre at pp. 2-5. Section 22.535 of the Commission's rules allows paging stations in the VHF band to operate with an ERP of 1400 watts provided the transmitter is located at least 5 kilometers from a fixed adjacent channel system.

¹⁶ Arch supports SEA only insofar as it proposes to retain the existing ERP for paging transmitters operating on mobile frequencies. See SEA Comments at p. 2-6.

CERTIFICATE OF SERVICE

I, Shelia L. Smith, hereby certify that on this 19th day of June 1997, copies of the foregoing Reply of Arch Communications Group, Inc. in PR Docket No. 89-552, RM-8506, GN Docket No. 93-252 and PP Docket No. 93-253 were served on the following by first-class, postage-prepaid mail to:

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