

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

In the Matter of

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

**COMMENTS OF AVAYA**

Avaya Inc. (“Avaya”), formerly the Enterprise Network Group of Lucent Technologies, respectfully submits its comments in response to the Federal Communications Commission’s (“FCC” or “Commission”) Notice of Proposed Rule Making (“NPRM”) in the above-captioned docket. The Commission’s NPRM seeks comment on the reconfiguration of the 800 MHz band to remedy interference to public systems in the band. Under one of the proposals discussed in the NPRM, the unlicensed PCS (“UPCS”) bands at 1910-1920 MHz and 1920-1930 MHz are mentioned as several possible “replacement bands” for displaced services in the 800 MHz band.

This proposal appears to be rooted in a prior proposal in the advanced services docket, which also raised the issue of reallocation of some, or all, of the UPCS band. The proposal does not, however, consider the voluminous objections raised by commentors in that docket on a variety of public interest grounds. As discussed herein and in Avaya’s advanced services comments, Avaya is strenuously opposed to any reallocation of the UPCS band as both contrary and detrimental to the public interest.

## **I. INTRODUCTION AND SUMMARY.**

As a leading provider of communications systems and software, including UPCS devices, Avaya's interests are directly affected by the proposed reallocation of the UPCS band. Avaya's UPCS devices permit end users to communicate with each other via Definity Wireless Business Systems (a wireless PBX system), and provide mission critical, and sometimes life-supporting, services. As such, Avaya is dismayed that the Commission would consider reallocating the UPCS band—and the isochronous 1920-1930 MHz band in particular—for services other than UPCS. This proposed action directly contravenes years of prior decisions encouraging manufacturers and end users to invest in the band.

If the Commission were to inadvisably pursue reallocation of the UPCS band, the impact would be devastating. Avaya, in conjunction with other UPCS industry members, has invested hundreds of millions of dollars in products that comply with the rigorous Part 15 etiquette. Customers, for their part, have made considerable investments in acquiring and installing UPCS systems and are unlikely to be able to afford either the installation cost of replacement systems or the service disruptions that reallocation of the UPCS frequencies would necessitate. Moreover, the potential trade-off for this severe injury to the public welfare would be the reallocation of a band that, as discussed herein, is technically incompatible for services other than UPCS. In sum, the Commission cannot reallocate the UPCS frequencies without dealing a significant, and potentially fatal, blow to the UPCS industry and without disrupting service to hundreds of thousands of users. Accordingly, Avaya urges the FCC to expeditiously terminate this proceeding at least with respect to reallocation of UPCS frequencies.

## **II. REALLOCATION OF THE UPCS BAND WILL UPSET SIGNIFICANT, REASONABLE AND GOOD-FAITH EXPECTATIONS**

Avaya, and other UPCS manufacturers and vendors, have placed considerable reliance upon the Commission's decision to allocate spectrum for UPCS use. In turn, end users have relied upon the UPCS products and services that Avaya and others have placed on the market. As discussed below, the development of Part 15-compliant UPCS products, and the establishment of a customer base for these products, has come at a very high price. UPCS manufacturers have overcome a myriad of regulatory hurdles, and customers have made significant pricing and usage accommodations, in order to develop the UPCS band and foster a viable market in UPCS products. Thus, the FCC's simplistic conclusion that "the band is lightly used for unlicensed devices" because only forty-five such devices have been approved by the Commission, is a mischaracterization of the depth of the UPCS market.<sup>1</sup> In actuality, thousands of customers have come to rely on UPCS products for a variety of uses, including public safety uses.

### **A. Notwithstanding the Enormous Hardships Caused by the Many Technical and Usage Restrictions Imposed Upon UPCS Devices, Use of the Isochronous (1920-1930 MHz) Band Is Flourishing.**

In its 1994 *Memorandum Opinion and Order* allocating spectrum for unlicensed use, the Commission recognized the importance of UPCS, stating that its UPCS allocation "will have an overall positive effect for consumers in terms of the diversity and utility of unlicensed devices available on the market, as well as the rapid deployment of competitive licensed PCS Services."<sup>2</sup> In reliance upon the Commission's decision to allocate spectrum for UPCS, Avaya and other

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<sup>1</sup> In the Matter of Improving Public Safety Communication in the 800 MHz Band, Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, WT Docket No. 02-55, at ¶ 51 (Mar. 15, 2002) (*Notice of Proposed Rulemaking*) ("800MHz NPRM").

<sup>2</sup> Amendment of the Commission's Rules to Establish New Personal Communications Services, *Memorandum Opinion and Order*, 75 RR 2d 491, 9 FCC Rcd 4957, ¶ 84 (1994) ("1994 Order").

manufacturers have gone forward to develop, market and deploy UPCS products, and have been tremendously successful in utilizing the isochronous band. This success, however, has come at great financial cost and with much effort, due to the unique environment at 1910-1930 MHz.

UPCS manufacturers must comply with an onerous, complex and singularly comprehensive set of regulations to deploy systems in the UPCS band:

- As an initial matter, the spectrum etiquette itself, while conferring significant benefits, mandates rigid adherence to technical requirements that are unique and from a development perspective, expensive. Because incumbent microwave licensees operate in the UPCS band, the Commission has imposed a number of requirements to guard against interference. Part 15 requires any unlicensed PCS device or system to be coordinated through UTAM, the Commission's designated frequency coordinator for the UPCS band, prior to deployment or relocation.
- All UPCS equipment also must undergo the Commission's equipment authorization process, including requirements to provide the Commission with an explanation of all measures that will (1) ensure that the device cannot be activated until installation at the authorized location is verified by UTAM and (2) enable the device to be automatically disabled if it is relocated outside its intended geographic area.
- Because Avaya and other UPCS manufacturers are expected to share the costs of relocating incumbent microwave licensees from the UPCS band, manufacturers are assessed a fee in the amount of \$20 for each UPCS device. The proceeds of this fee are used to cover relocation expenses. UPCS manufacturers, working in tandem with UTAM, already have expended \$60 million in relocation costs for migrating incumbent microwave licensees.
- Furthermore, once UPCS equipment is approved, a licensed technician must install and relocate the equipment, imposing additional costs inapplicable in other bands.<sup>3</sup>
- Avaya (and other manufacturers) must continually update the UTAM coordination database any time a base station is added, to ensure the accuracy of information on deployed UPCS systems.
- Avaya (and other manufacturers) must submit to recurring auditing requirements to ensure the accuracy of UTAM fees, and must bear the financial burden of such audits.

Developing products that comply with the Part 15 etiquette and the unique requirements of the UPCS band has been no simple technical feat. Moreover, selling these products to end

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<sup>3</sup> See 47 C.F.R §§ 15.303 - 15.311; *see also* 1994 Order at ¶ 222.

users—laden as they are with numerous caveats and restrictions—has required much effort and persistence to achieve market penetration. As the Commission must recognize, while these restrictions may serve the useful purpose of safeguarding operations against interference, they also increase the cost of deploying and marketing UPCS products.

Notwithstanding the many challenges to deployment of UPCS devices, many manufacturers have invested huge sums to develop the necessary technologies, features, and procedures unique to this band. Avaya's own hard-earned success serves as a concrete example of the effort that has been made to develop and deploy UPCS systems and to diversify the wireless service offerings available to the public. Avaya has succeeded in rolling out UPCS systems to many users and in developing low-power UPCS devices capable of operating in close proximity to one another without creating interference issues. Current Avaya customers represent a wide variety of groups and industries, including hospitals, state and local governments, universities, convention centers, stock and commodity trading exchanges, nuclear power plants, and convention centers. UPCS devices are used for everything from facilitating communications between hospital staff to facilitating trading on exchange floors. For example, Avaya's systems are used in numerous hospitals to permit doctors, nurses and other staff to communicate quickly and dependably in emergency situations, as well as to conveniently handle routine matters, such as the delivery of proper medications to patients. Furthermore, Avaya's systems operate in a manner that minimizes interference concerns with the hospital's medical and other equipment—a critical factor in a hospital setting, where the efficacy of life-saving medical equipment cannot be compromised.

In sum, Avaya and other UPCS industry members have invested considerable resources in developing and marketing technically compliant UPCS products to consumers and have

achieved considerable success. Indeed, at the urging of the FCC, UPCS manufacturers have considerably expanded the menu of telecommunications capabilities available to the public. Further, these investments have been made based on the implicit promise and inducement by the FCC that the industry would be permitted to mature and recoup initial development costs. Should the FCC decide to reallocate the isochronous band at this juncture, after so much financial and human capital has been invested in UPCS technology, the FCC will be dealing the industry an unexpected and potentially fatal blow. In the event that the Commission reallocates any portion of the UPCS band for other use, the Commission must take the investments of the UPCS industry into consideration and fully reimburse industry members such as Avaya, who have spent considerable amounts of money in clearing the band.

**B. Consumers Rely Upon UPCS Devices for Critical Services and Can Neither Afford Nor Be Expected To Replace their Current Wireless Systems.**

The hundreds of thousands of end users who presently use and rely upon UPCS products have invested millions of dollars in acquiring and installing these systems. In many cases, these end users may be unable to install substitute systems without incurring prohibitive costs or experiencing intolerable—and in some cases, potentially life-threatening—service delays. Furthermore, customers rely upon their UPCS systems to provide a mobility solution to their business needs. Customers cannot physically or reasonably be expected to remove their present systems and install substitute systems that operate on alternative frequencies.

As a practical matter, asking consumers to replace their UPCS systems is tantamount to asking consumers to accomplish the infeasible task of replacing their communications systems while simultaneously conducting normal business operations. For example, nurses who presently use wireless handsets to communicate with other hospital staff would be forced to give up their current handsets. These nurses, accustomed to being able to move freely about the

hospital, would be forced to utilize an alternative method for communications, such as a landline phone. Such a requirement would hamper their mobility and attendant ability to respond quickly to patient needs. Additionally, many companies provide their employees with wireless handsets that are connected to their PBX system; removing these handsets would be akin to removing an employee's phone. The Commission cannot reasonably expect organizations and companies to suspend operations while they remove and reinstall phone systems; such a requirement would be unduly onerous and severely detrimental to conducting daily business.

Furthermore, the 1920-1930 MHz band specifically provides many benefits to end users, including the convenience of being able to communicate without incurring airtime charges and the comfort of heightened interference protection. The 1920-1930 MHz band is preferred in providing services to consumers, including a mobility solution, in large part because of the many technical and other safeguards that are imposed pursuant to the Part 15 etiquette. Because UPCS devices operating in this band are subject to a multitude of strict requirements, as outlined above, consumers have some assurance that their communications will not experience interference.

If, against Avaya's and other industry members' express judgment, the Commission chooses to move forward and reallocate the isochronous band for uses other than UPCS, the Commission should compensate fully the many end users who are dependent upon their UPCS systems and who have invested heavily in the band. These end users generally are smaller, site-specific entities that cannot afford to purchase additional or substitute systems. The Commission cannot take spectrum away from its present allocation, absent compensation or otherwise providing for the needs of end users, without effectuating a complete breach of the public's trust and expectations.

### **III. REALLOCATING THE UPCS BAND MAY IRREPARABLY INJURE THE UPCS INDUSTRY.**

As explained above, a decision to reallocate the UPCS band—and the isochronous band specifically—will undermine the considerable faith that the public has placed in the Commission’s spectrum allocation decisions. Members of the UPCS industry, as well as consumers, have invested millions of dollars in the development of the UPCS band, and have acted in good-faith reliance upon the Commission’s decision to allocate spectrum at 1920-1930 for isochronous devices. Not only will reallocation of these frequencies decimate the public’s ability to rely upon future Commission decisions, and to make business investments and decisions based upon Commission actions, but reallocation of the 1920-1930 MHz band has the potential to precipitate the downturn and ultimate collapse of the UPCS industry in general.

Manufacturers and distributors of UPCS devices have invested considerable amounts of money and effort in developing a UPCS product market. The industry has not yet had sufficient opportunity to recover the gains of these investments, and the Commission should recognize the inequity of reallocating spectrum at this time. Furthermore, the Commission should consider the impact that any reallocation of frequencies will have upon the industry’s relationships with its customers. These customers have invested considerable sums in UPCS technology and fully expect, based upon the representations of the UPCS industry (as well as the FCC), that they will be able to receive the full benefits of their UPCS technology in return for this investment. Avaya has worked assiduously to cultivate customer relationships and to develop a market base in UPCS devices; reallocation of the 1920-1930 MHz frequencies will go a long way towards destroying these customer relationships, as Avaya’s credibility will be severely undermined.

Indeed, the issuance of the NPRM has added to considerable market confusion with respect to the continued availability of the 1920-1930 MHz band for UPCS devices, a situation

already rendered unstable by the FNPRM seeking reallocation of the UPCS band for 3G advanced wireless services.<sup>4</sup> If customers are unsure that UPCS devices will be able to operate on these frequencies, they are unlikely to purchase UPCS equipment. Avaya is aware of competitors who have seized upon the 3G FNPRM to spur market confusion, suggesting to would-be UPCS customers that investments in UPCS products may be ill advised in light of the FNPRM. Accordingly, the Commission should act swiftly to remove any uncertainty and to confirm that the 1920-1930 MHz band will retain its present allocation.

**IV. THE UPCS BAND IS TECHNICALLY UNSUITABLE FOR USES OTHER THAN UPCS, DUE TO ITS CRITICAL FUNCTION AS A GUARD BAND.**

Avaya further submits that, due to interference concerns, the 1910-1930 MHz band is of little technical utility for uses other than UPCS. The UPCS band cannot be used by high power services because it occupies a unique niche between the licensed PCS base and mobile transmit bands. Even if it were desirable to consider pairing the spectrum to create opportunities for licensed mobile use, additional spectrum would be required elsewhere to maintain the 80 MHz transmit/receive separation for licensed PCS in the United States. Even if such spectrum were found, the end result would be that the lower power mobile transmit band, currently from 1850-1910 MHz, would be expanded to be immediately adjacent to the higher power base transmit band, currently from 1930-1990 MHz, or vice-versa. Avaya submits that the UPCS band, as allocated to low power devices that receive no interference protection, serves a necessary and critical function as a guard band to protect the integrity of licensed PCS services.

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<sup>4</sup> In the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, ET Docket No. 00-258 (Aug. 20, 2001) ("3G FNPRM").

## V. CONCLUSION

For the aforementioned reasons, Avaya is opposed to any proposed reallocation of the UPCS band generally, and of the 1920-1930 MHz band specifically. As explained in detail above, reallocation of these frequencies would (1) upset the present expectations and good-faith reliance of UPCS industry members and end users; (2) impose a tremendous financial and impractical burden upon end users by requiring, in essence, that they replace their communications systems; (3) deprive UPCS manufacturers and end users the benefit of recouping their considerable investments in UPCS technology; and (4) undermine the economic health of the UPCS industry generally. In return for inflicting these injuries upon the UPCS industry, the Commission would be reclaiming spectrum that is technically unsuitable for use as replacement spectrum. Accordingly, Avaya urges the Commission to retain the present allocation of the 1910-1920 MHz and 1920-1930 MHz bands for UPCS use.

Respectfully Submitted,

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