ORIGINAL

LUKAS, NACE, GUTIERREZ & SACHS
CHARTERED
1111 NINETEENTH STREET, N.W.
SUITE 1200
WASHINGTON, D.C. 20036
(202) 857-3500

EX PARTE OR LATE FILED

RUSSELL D. LUKAS
DAVID L. NACE
THOMAS GUTIERREZ
ELIZABETH R. SACHS
GEORGE L. LYON, JR.
JOEL R. KASWELL
PAMELA L. GIST
DAVID A. LAFURIA
MARILYN SUCHECKI MENSE
PAMELA GAARY HOLRAN
B. LYNN F. RATNAVALE
TODD SLAMOWITZ
DAVID M. BRIGLIA
ALLISON M. JONES
+ NOT ADMITTED IN D.C.

CONSULTING ENGINEERS
ALI KUZEHKANANI
LEROY A. ADAM
LEILA REZANAVAZ
TY COLONEY

OF COUNSEL
JOHN J. McAVOY
J.K. HAGE III+
LEONARD S. KOLSKY+

TELECOPIER
(202) 857-5747

Email: lngs@fcclaw.com
http://www.fcclaw.com

WRITER'S DIRECT DIAL
(202) 828-9464
lkolsky@fcclaw.com

July 13, 2001

RECEIVED
JUL 13 2001
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Magalie Roman Salas, Secretary
Federal Communications Commission
445 12th Street, S.W., TW-A325
Washington, DC 20554

Re: ET Docket No. 00-221
Notice of Oral Ex Parte Communication

Dear Secretary Salas:

On July 12, 2001, ArrayComm, Inc. (hereinafter ArrayComm) through its representatives, Bradley Holmes, Randall Coleman and Leonard Kolsky met with Peter Tenhula, senior legal advisor to Chairman Michael Powell, and Allan Parr, legal intern regarding the above-referenced proceeding.

A copy of a filing entitled "Supplemental Comments of ArrayComm, Inc." along with a "Motion to Accept Supplemental Comments of ArrayComm, Inc." were presented and discussed by ArrayComm.

Pursuant to Section 1.206(b) of the Commission's Rules and Regulations, 47 C.F.R. § 1.206(b), two copies of the documents referenced herein are included.

Respectfully Submitted,

Leonard S. Kolsky

Leonard S. Kolsky
Counsel for ArrayComm, Inc.

LK.ns
cc: Peter Tenhula, Esq.

No. of Copies rec'd 0+1
List A B C D E

ORIGINAL

RECEIVED
JUL 13 2001
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Reallocation of the 216-220 MHz,	)	ET Docket No. 00-221
1390-1395 MHz, 1427-1429 MHz,	)	RM-9267
1429-1432 MHz, 1432-1435 MHz,	)	RM-9692
1670-1675 MHz, 2385-2390 MHz	)	RM-9797
Government Transfer Bands	)	RM-9854

SUPPLEMENTAL COMMENTS OF ARRAYCOMM, INC.

Bradley P. Holmes
Senior Vice President
Regulatory and Government Affairs

Randall S. Coleman
Vice President, Regulatory Affairs

ARRAYCOMM, INC.
800 Sixteenth Street, NW
Suite 700
Washington, D.C. 20006
(202) 835-1925

July 10, 2001

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Reallocation of the 216-220 MHz,	)	ET Docket No. 00-221
1390-1395 MHz, 1427-1429 MHz,	)	RM-9267
1429-1432 MHz, 1432-1435 MHz,	)	RM-9692
1670-1675 MHz, 2385-2390 MHz	)	RM-9797
Government Transfer Bands	)	RM-9854

SUPPLEMENTAL COMMENTS OF ARRAYCOMM, INC.

ArrayComm, Inc. ("ArrayComm") hereby respectfully submits these supplemental comments in response to the Federal Communications Commission's ("Commission or FCC") *Notice of Proposed Rulemaking* in the above-captioned proceeding. As described in the attached Motion to Accept Supplemental Comments, filed concurrently herewith, these supplemental comments are being submitted to augment the record with respect to ArrayComm's views that the geographic scope of the license for spectrum at 1670-75 Megahertz ("MHz") should be nationwide and that combinatorial or "package" bidding should not be employed in the auction of said spectrum.

I. INTRODUCTION

ArrayComm, Inc. is a small, Silicon Valley-based technology house with plans to introduce innovative new technology into the wireless industry, to benefit consumers wishing to gain access to broadband Internet services. In addition to IntelliCell®, our state-of-the-art adaptive ("smart") antenna technology,[1] ArrayComm is developing *i-BURST*, a wide-area portable broadband Internet solution, which combines the spectral efficiency of IntelliCell®

[1] IntelliCell is currently deployed in over 75,000 base stations in Japan, China and Taiwan.

technology with an IP-optimized radio interface and a unique IP-centric architecture. *i-BURST* enables large-scale, high-speed wireless Internet networks to be deployed and maintained at significantly lower cost than today's cellular data solutions, as well as the 3G solutions expected in the future. *i-BURST* has been optimized to operate over one or more, unpaired bands of radio spectrum using time division duplexing ("TDD") transmission technology and delivers as much as 1 megabit per second ("1 Mbps") of throughput to each end user with 20 Mbps of aggregate per-cell throughput in 5 MHz.[2]

ArrayComm is concerned that pending Commission action in this rulemaking will harm the prospects for a successful deployment of *i-BURST*. This innovative, IP-centric service can be deployed using as little as 5 MHz of unpaired, contiguous spectrum and serve millions of consumers across the US. The 1670-75 MHz band, which is due to be reallocated for commercial use in the referenced docket, would suit that purpose. Two related matters regarding this spectrum band are of paramount importance to ArrayComm and are the topics of the remainder of this letter: the geographic market size chosen for the auction and the auction methodology used to assign the band. Depending on how they are handled, these two matters can have a significant positive or negative impact on the expense and delayed time to market that will confront auction participants.

---

[2] TDD is inherently more efficient for wireless data applications than the traditional frequency division duplex (FDD) transmission methods, which employ paired bands of spectrum. It also allows maximum benefit to be extracted from adaptive antenna processing methods.

II. ARRAYCOMM BELIEVES THAT A NATIONWIDE LICENSE IS CRUCIAL TO THE ECONOMIC AND COMPETITIVE VIABILITY OF *i-BURST*.

The market for wireless services is a national market. Each successful new wireless service since cellular, *e.g.*, personal communications service (PCS), two-way paging, has evolved into a nationwide service, regardless of the original geographic scope of the licenses assigned. This evolution is necessary in order to compete with pre-existing wireless offerings in the marketplace that are national in scope and enjoy national brand recognition. Significant wireless industry concentration continues to occur in the US, as demonstrated by the recent acquisitions involving Verizon, VoiceStream and AT&T. Although *i-BURST* is optimized for Internet access and other data services, rather than voice service, it must compete with existing wireless Internet and data services riding national cellular and PCS networks. Likewise, the Commission should assign spectrum based on market realities, not based on the rules of the road for cellular in the 1980's.

As the wireless marketplace has repeatedly demonstrated, the post-auction aggregation of local and regional markets to create a nationwide footprint adds cost and delay to the launch of services demanded by consumers. ArrayComm urges the Commission to obviate this geographic aggregation and instead allow the eventual auction winner, which of course may or may not be ArrayComm, to spend its post-auction time and resources to build out a nationwide network. Because of the national character of the wireless marketplace, the competitive viability of a new entrant will be enhanced if the choice of technology and service features can be internalized within a single firm. A nationwide license will allow a firm to efficiently create a network and service apparatus that can compete with existing national services.

By its very nature, *i-BURST* must be nationwide in scope. *i-BURST* will enable the provision of truly broadband portable wireless access to the Internet. This kind of service cannot

survive if provided on solely a regional basis. Providers of this service, their investors and partners (such as content providers), as well as consumers, will find value in the ability to access the Internet at very high data rates *anytime, anywhere.*

In fact, a nationwide footprint for the 1670-1675 MHz allocation is the only way in which this band can be used for Internet access. Products, which facilitate Internet use by transient users across the nation, cannot be deployed if they only work in pockets of the country – their very purpose is to give people Internet access while on the move.

In this regard, this allocation is not similar to cellular or PCS. In those services, the technology has been standardized to a significant degree and the equipment deployed in the field assures at least some significant degree of interoperability. Moreover roaming rules, either automatic or manual, have been in existence for some time, and the billing and other relationships are in place to facilitate roaming, thus permitting nationwide use. In other words, although the licenses may be regional in scope (but are being aggregated into national licenses), the rules and relationships exist to assure that those seeking national service can obtain it.

The same is not true in the context of the 1670-75 MHz band, and for the Internet access service that this band could readily support. There is no such standardization or harmonization for interoperability that yet exists in wireless Internet access and no rules, or clearinghouses that govern the interrelationships between possible diverse services and service providers. Thus, service providers with regional licenses would be able only to offer balkanized service, limited to their own territory for the foreseeable future.

Likewise, users would not be able to obtain national service, which in turn would make the product much less desirable. ArrayComm cannot anticipate companies being willing to buy, or users being willing to carry, a different Internet access device for each region of the country in

which a user may travel. The reason that people will buy this service is to be able to use it throughout the country on an untethered basis.

ArrayComm must also point out that as the record stands in ET Docket No. 00-221, all three parties that have expressed an interest in the 1670-75 MHz band, ArrayComm, AeroAstro and Microtrax, agree that the band should be licensed on a nationwide basis. On this basis, ArrayComm urges the Commission to at least tentatively conclude in the forthcoming Further Notice of Proposed Rulemaking in this proceeding, that a nationwide license should be established.

ArrayComm acknowledges that some will argue that a nationwide license will preclude participation in the auction by small businesses. As stated at the outset, ArrayComm itself is a small company with big plans. The unique aspects of the 1670-75 MHz band (*e.g.*, the relatively small sliver of spectrum, the fact that it is unpaired, the fact that it is suited to innovative services and technologies) make this band more appealing to small companies, like ArrayComm, that wish to offer a broadly available service.

Other parties may argue that a nationwide license would discourage the network build out and service availability in rural areas. This argument is a red herring. Previous auctions have shown that whether licenses at auction are national or regional in scope, population centers are built out first, with the less populous areas coming later. This rural service argument should not be allowed to impede the technological innovation and availability of broadband wireless access to the Internet that *i-BURST* promises. ArrayComm believes it can change the economics of wireless data service using its IntelliCell® and *i-BURST* technologies, provided it can avoid the cost and delay resulting from the need to aggregate markets after the auction. These improved economics will in fact further the cause of rural service; reductions in per-user capital and

operating costs serve to increase the attractiveness of customers in lightly populated areas to network operators. Even in the event that an operator chooses not to serve a particular rural area, ArrayComm is confident that through partitioning, disaggregation and other secondary market arrangements, those areas, as well as small businesses, can partake of the opportunities and benefits that *i-BURST* (or some other new technology or service) will offer. The proposed service rules ArrayComm submitted in its Reply Comments in this proceeding provide for such partitioning and disaggregation.

Moreover, proponents of local and regional licenses often cite Section 309(j) of the Communications Act, which directs the Commission to design auction methodologies with, among other things, promote deployment of innovative technologies, products and services for the public, including those residing in rural areas, economic opportunity and competition and the dissemination of licenses among a wide variety of applicants, including small businesses, rural telephone companies and others.[3] However, this section does not require that *every* auction must include special considerations for small businesses and rural areas. The auction of large blocks of spectrum seem to ArrayComm to be better vehicles to promote such policies, instead of a small sliver of unpaired spectrum such as the 1670-75 MHz band.

Moreover, Section 309(j) also directs the Commission to prescribe auction rules that promote investment in and rapid deployment of new technologies, products and services.[4] ArrayComm asserts that this principal should not be subordinate to small business and rural interests, especially in an instance where prospective auction applicants have uniformly indicated their intent to enter and compete in market segments that are national in scope. In fact, ArrayComm believes the 1670-75 MHz band offers the Commission a unique opportunity to

---

[3] *See* 47 USC §§ 309(j)(3)(A) and (B).

[4] *See* 47 USC §§ 309(j)(3)(A).

allow a new entrant, whether ArrayComm or some other entity, a chance to enter the national wireless market and provide a unique and valuable service without unnecessary delay and cost.

III. AUCTION OF THE 1670-75 MHZ BAND SHOULD NOT BE THE TEST CASE FOR COMBINATORIAL, OR "PACKAGE," BIDDING.

Despite apparent staff interest in staging a live "test bed" for package bidding, this is just not the time or the place to pursue that course. In the first instance, unlike at 700 MHz, there is not even a scintilla of public thought which has gone into the compilation of rules that would govern an auction for this spectrum and the services that may be provided using this spectrum. This is critically important to determine whether a combinatorial bid approach would provide any benefit at all to this allocation.

Moreover, the rules that could govern in a package or combinatorial auction are all interrelated or, in other words, are interdependent. Without having any concept of what type of auction design might be contemplated, let alone the totality of the proposed rules, no one can begin to think about how the rules would should be crafted, let alone consider how the rules might affect their participation in an auctions or overall auction strategy.

This is one of the problems, in fact, that the FCC has faced in the context of the 700 MHz auction. There, Professor Weber recognized the issue, stating ". . . the impact of any individual rule proposal in this complex environment depends critically upon the manner in which other rule proposals are resolved."[5] Dr. Paul Milgrom, too, notes the interrelationships, concluding that to implement combinatorial bidding ". . . several details need to be gotten right."[6] There, Dr. Milgrom notes, as examples, the interrelationships between strategic delay in bidding,

---

[5] *See* Reply Comments By Professor Weber on FCC Report No. AUC-00-31-G, dated June 15, 2000, at 1.

[6] *See* Letter to Mr. Evan Kwerel from Dr. Paul Milgrom, dated June 14, 2000, at 2.

activity rules, "parking," and the "threshold problem," which arise in the context of combinatorial bidding.[7]

Professor Weber, in fact, suggested in the context of the 700 MHz auction that the FCC would be better advised to go forward with the straightforward "familiar simultaneous multi-round auction procedure" than proceed without all of the interrelated questions answered.[8] Similarly, the National Economic Research Associates, Inc. (NERA) shared the concern that an evaluation of the package bidding rules could not even begin without a "complete set of proposed bidding rules" [without which] it is impossible to make meaningful comment on how the ultimate auction structure should be designed."[9]

In the context of the 1670-1675 spectrum, there is simply no need to go through that effort and expense, either for the parties or for the Commission. The spectrum there could be quickly brought to market – even within the next six to twelve months, if the Commission were to proceed with the simultaneous multi-round auction procedures it knows well, and in fact deployed in the first of its auctions – a nationwide narrowband PCS auction. The rules would

---

[7] According to Dr. Milgrom:

> Strategic analysis of combinatorial bidding points to an incentive for bidders to postpone bidding and park their bids. Indeed, if everyone bids straightforwardly, then the longer one waits before beginning to bid, the greater the profit obtained in the auction. Activity rules are a partial solution to this problem, but bidders can get around many simple activity rules by "parking" – a strategy that has already been seen in the FCC spectrum auctions. Excessive parking needs special consideration in combinatorial auctions, because there are so many packages on which bidders could potentially park.
>
> The "threshold problem" is a close cousin of the parking problem. A bidder may be inclined to refrain from raising its bid on a non-winning package in the hope that other bidders will raise their bids enough to convert its existing bid to a winning bid. That pattern provides an advantage to bidders for larger packages, who need not coordinate their bids with as many other bidders. As I have demonstrated elsewhere, this provides an incentive for bidders to exaggerate their relative values for larger packages – I call this the *large package problem.*"

Id.

[8] *See* Reply to Comments on FCC Report No. AUC-00-31-G, prepared by Professor Robert J. Weber, Dated June 15, 2000, at 2.

[9] Comments of NERA on FCC Report No. AUC-00-31-G, prepared by Dr. David J. Salant, filed June 8, 2000.

need to be no more complex that they were for that auction, as they have been refined in the last few years. Proceeding in this fashion would allow new Internet access services, or new tracking or other services using the 5 MHz to quickly come to market. Proceeding any other way would be a recipe for delay, and ultimate disaster for these services.[10]

And to what end? The spectrum allocation and auction for this 5 MHz is simple, easy to design, and easy to implement. There is simply no reason, other than intellectual curiosity, to go forward with any sort of combinatorial bidding for this spectrum.

IV. CONCLUSION

For the foregoing reasons, ArrayComm urges the Commission not to impose unnecessary cost and complexity on the auction of the 1670-75 MHz band. The Commission should recognize that so far *all* parties expressing an interest in this spectrum band support a nationwide license. The Commission should also defer application of the package bidding methodology to a more appropriate auction where participants with auction experience and greater resources are likely to participate.

The Commission has the opportunity here to take a new direction by offering a very small but national slice of spectrum for potential use by a highly efficient technology that benefits consumers through increased choice and affordability, and meets the goal of spectrum policymakers seeking spectrum efficiency for consumer wireless services. ArrayComm believes this approach will allow it to demonstrate and fulfill the promise of portable nationwide wireless

[10] Moreover, as in 700 MHz proceeding, there would need to be software developed, tested, and purchased in order to allow applicants to have the computational information available to them, to reasonably participate in the auction, and avoid playing in the auction blindfolded.

ORIGINAL

broadband high-speed access to the Internet, provided that it is not hampered by auction rules meant for conventional, less spectrum-efficient applications.

Respectfully submitted,

ARRAYCOMM, INC.

By: /s/ Randall S. Coleman

Bradley P. Holmes
Senior Vice President
Regulatory and Government Affairs

Randall S. Coleman
Vice President, Regulatory Affairs

ARRAYCOMM, INC.
800 Sixteenth Street, NW
Suite 700
Washington, D.C. 20006
(202) 835-1925

July 10, 2001

Federal Communications Commission

The FCC Acknowledges Receipt of Comments From ...

ArrayComm, Inc.

...and Thank You for Your Comments

Your Confirmation Number is: '2001710037662 ' 1

Date Received: **Jul 10 2001**

Docket: **00-221**

Number of Files Transmitted: **1**

File Name	File Type	File Size (bytes)
SUPPLEMENT	Microsoft Word	47617

Initiate a Submission | Search ECFS | Return to ECFS Home Page

FCC Home Page | Search | Commissioners | Bureaus/Offices | Finding Info

updated 07/07/00

ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Reallocation of the 216-220 MHz,	)	ET Docket No. 00-221
1390-1395 MHz, 1427-1429 MHz,	)	RM-9267
1429-1432 MHz, 1432-1435 MHz,	)	RM-9692
1670-1675 MHz, 2385-2390 MHz	)	RM-9797
Government Transfer Bands	)	RM-9854

MOTION TO ACCEPT SUPPLEMENTAL COMMENTS OF ARRAYCOMM, INC.

Pursuant to Sections 1.46 and 1.415 of the Commission's rules,[1] ArrayComm, Inc. ("ArrayComm") requests leave to file out of time the attached Supplemental Comments to the *Notice of Proposed Rule Making* in the above-referenced proceeding. ArrayComm has reviewed the record in this proceeding and, in light of industry comments and informal discussions with Commission staff, ArrayComm would like to amplify its position with respect to the establishment of a nationwide license for the spectrum at 1670-75 megahertz and its belief that use of combinatorial or package bidding to assign said spectrum would be inappropriate. Accordingly, ArrayComm is submitting the attached supplemental comments in the interest of ensuring that the Commission bases a decision, or any tentative conclusions, in this proceeding upon a complete and fully accurate record.

Commission precedent supports grant of this motion and acceptance of these supplemental comments. The Commission has accepted late-filed comments in order to compile a full and adequate record upon which to base a decision in a given proceeding, where such comments neither prejudice any of the parties to the proceeding nor delay resolution.[2]

---

[1] 47 C.F.R. §§ 1.46, 1.415. Section 1.415 states that comments, in addition to initial and reply comments, may not be filed "unless specifically requested or authorized by the Commission."

[2] *See, e.g.* Amendment of Section 73.202(b), Table of Allotments, FM Broadcast Stations (Kimberly Idaho), 15 FCC Rcd 10298, n. 1 (2000) (considering late-filed comments in order to obtain a more complete record); Amendment of Section 73.606(b), Table of Allotments, TV Broadcast Stations (Appleton, New London and (continued)

ORIGINAL

Additionally, Commission policy favors resolution based upon an adequate, correct record after full participation by all parties affected.[3] ArrayComm has been an active participant throughout this proceeding because any Commission determination likely will have a considerable and direct impact upon its business planning. ArrayComm is in a unique position to offer spectrum-efficient, portable nationwide wireless broadband high-speed access to the Internet, provided that it is not hampered by auction rules based on an out-of-date understanding of the wireless marketplace and by an auction methodology which is inappropriate for the unique sliver of spectrum at issue.

Accordingly, for the foregoing reasons, ArrayComm respectfully requests that the Commission include the attached supplemental comments in the record for the above-captioned proceeding.

Respectfully submitted,

ARRAYCOMM, INC.

By: /s/ Randall S. Coleman

Bradley P. Holmes
Senior Vice President
Regulatory and Government Affairs

Randall S. Coleman
Vice President, Regulatory Affairs

ARRAYCOMM, INC.
888 Sixteenth Street, NW
Suite 700
Washington, D.C. 20006
(202) 835-1925

July 10, 2001

Suring, Wisconsin), 10 FCC Rcd 7712, n. 2 (1995) (granting motion to accept late-filed comments to obtain a more complete record where acceptance of late-filed pleadings would not delay resolution of the proceeding).

[3] *See Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934*, 15 FCC Rcd 4948, ¶ 4, n. 7 (2000) (accepting late-filed comments in the interest of ensuring full and fair participation of interested parties).

Federal Communications Commission

The FCC Acknowledges Receipt of Comments From ...

ArrayComm, Inc.

...and Thank You for Your Comments

Your Confirmation Number is: '2001710566447 ' 1

Date Received: **Jul 10 2001**

Docket: **00-221**

Number of Files Transmitted: **1**

File Name	File Type	File Size (bytes)
MOTION	Microsoft Word	26625

Initiate a Submission | Search ECFS | Return to ECFS Home Page

FCC Home Page | Search | Commissioners | Bureaus/Offices | Finding Info

updated 07/07/00