

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

In the Matter of)	
)	
Service Rules for Advanced Wireless Services In the 1.7 GHz and 2.1 GHz Bands)	WT Docket No. 02-353
)	
)	

COMMENTS OF PETROCOM LICENSE CORPORATION

PetroCom License Corporation (“PetroCom”), pursuant to the provisions of Section 1.415 of the rules and regulations of the Federal Communications Commission (“FCC” or “Commission”) and the invitation extended by the Commission in the above-referenced Notice of Proposed Rulemaking (“NPRM”)^{1/} hereby submits its comments responsive to the FCC’s proposed service rules for Advanced Wireless Services (“AWS”) in the 1710-1755 MHz and 2110-2155 MHz bands (the “AWS Bands”).

I. INTRODUCTION

PetroCom^{2/} is a full-service telecommunications and network solutions company serving the business community, with particular emphasis in the energy industry. Headquartered in New Orleans, Louisiana (with offices in Lafayette, LA and Houston, TX) and founded in 1983, PetroCom was the first offshore cellular network in the world. What began as a single cell site

^{1/} *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT Docket No. 02-353, Notice of Proposed Rulemaking, FCC 02-305 (rel. Nov. 22, 2002) (“NPRM”).

^{2/} PetroCom provides service to the public through its affiliate, Petroleum Communications, LLC. For ease of reference, both PetroCom License Corporation and Petroleum Communications, LLC are referenced herein as PetroCom.

off the coast of Galveston, Texas in 1986 quickly grew into a 95,000-square mile satellite-based cellular network in the Gulf of Mexico (the “Gulf”), reaching from Brownsville, Texas to Mobile, Alabama. In addition to its cellular operations, PetroCom built and maintains a C-band and Ku-band satellite network, which routes traffic back to its New Orleans switch and teleport facility. In 1995, PetroCom took this satellite expertise, commercialized it, and today operates one of the industry's largest, most respected, Very Small Aperture Terminal (VSAT) network, with over 100 active remotes.

Simultaneously with the adoption of the NPRM, the FCC adopted a Second Report and Order allocating the AWS Bands for fixed and mobile services so licensees can provide third generation (“3G”) and other AWS to the public.^{3/} The NPRM proposes service rules for these newly allocated bands. Among other issues, the Commission requests comment on whether to include the Gulf in its licensing scheme for these bands.^{4/} If the Gulf is included, the Commission questions whether to include the Gulf as part of larger service areas, or whether it should separately license a service area or service areas to cover the Gulf.^{5/} The FCC also seeks comment on a variety of other issues, including whether it should permit the allocated spectrum to be used on a flexible basis, whether channel blocks should be licensed in a paired or unpaired fashion, and whether licensees should be required to satisfy performance requirements in these frequency bands.^{6/} Because PetroCom is a premier provider of communications services in the

^{3/} *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, Second Report and Order, FCC 02-304 (rel. Nov. 15, 2002).

^{4/} *NPRM* ¶24.

^{5/} *Id.*

^{6/} *Id.* ¶¶ 10-12, 26-32, 46-49.

Gulf, it may be interested in providing services to the public using the newly allocated bands in the Gulf. Accordingly, it is pleased to have this opportunity to submit the following comments.

II. COMMENTS

A. The FCC Should Separately License a Service Area or Service Areas to Cover the Gulf of Mexico

PetroCom supports the Commission's decision to allocate the AWS Bands for the provision of 3G and other AWS. PetroCom, like many commercial mobile radio services ("CMRS") providers, has experienced a growing demand for wireless services and anticipates that its customers will demand the services that 3G technology is expected to provide. For example, recent technological advances have resulted in increasing demand by PetroCom's subscribers for internet access, data transmission and system control and data acquisition ("SCADA") applications, among others services, which PetroCom provides in the Gulf.

Although existing spectrum currently available in the Gulf for commercial mobile wireless applications is sufficient to support the services PetroCom provides to its subscribers, such spectrum may not be sufficient to support wide scale AWS deployment in the future. The Commission, in establishing Gulf licensing areas for Multiple Address Systems ("MAS") noted that the Gulf area has experienced increasing demand for voice, data and video telecommunications services.^{7/} The demand for 3G and other AWS will continue to grow significantly as more and more applications are made available to the public. Therefore, the Commission should include the Gulf in its licensing scheme for these bands.

The Commission should separately license one or more service areas to cover the Gulf rather than including the Gulf as part of larger land based service areas. The provision of CMRS

^{7/} *Amendment of the Commission's Rules Regarding Multiple Address Systems*, WT Docket No. 97-81, Memorandum Opinion and Order, FCC 01-171, ¶27 (rel. May 29, 2001).

service in the Gulf is unique. As a Gulf based telecommunications provider, PetroCom offers a broad range of services designed to meet the distinctive and demanding communication needs of the energy industry, which are materially different from onshore customers. Land based services are expected to be consumer-driven and designed to serve enhanced mobile telephony requirements. Gulf centered service providers will necessarily be focused on meeting the needs of the critical energy industry. The domestic energy industry, more important today than ever, should not be subject to the provision of service by carriers whose primary focus will be the provision of land based services to the general public. Instead, the FCC should create one or more service areas for carriers whose primary focus will be the energy industry and its unique communications requirements.

As discussed below, PetroCom recommends that the FCC adopt service requirements that will ensure that the AWS Bands are effectively employed. Assuming that the FCC adopts a service requirement similar to those it has adopted in the past, a carrier will likely be required to demonstrate that it serves a percentage of the population or geographic area covered by its authorization. Including the Gulf in a land based service area may permit the licensee of that area to meet its coverage requirements without providing any service to the Gulf. Such a result is contrary to the public interest and damaging to the energy industry that PetroCom serves. Conversely, PetroCom's facilities are strategically positioned on oil and gas drilling platforms in order to serve the unique requirements of its subscribers. Accordingly, the FCC should create one or more service areas designed to include only the Gulf, and not land based areas as well.

In adopting a separate service area or areas to cover the Gulf, the Commission should employ the land-water line of demarcation as the boundary of such service areas. This approach

would be consistent with the approach taken by the FCC in licensing cellular systems.^{8/} In that proceeding, at least in the western segment of the Gulf, the Commission decided that the service area boundary should be the land-water line of demarcation.^{9/} While the FCC has adopted a different approach to issuing Wireless Communications Service (“WCS”) authorizations, the WCS will likely support exclusively fixed operations. The AWS spectrum that is the subject of this proceeding is expected to support mobile wireless services (although as noted below, it may be used in the Gulf to support fixed services as well). Because the use of the AWS Bands is more similar to cellular than, for example, WCS, the FCC should adopt the approach it followed in the Gulf Cellular Order with respect to the service area boundary for Gulf based systems. Moreover, as noted above, the provision of 3G and other AWS will continue to expand. Allowing land-based AWS operations to extend into the Gulf will create interference issues and will discourage Gulf AWS licensees from fully developing their systems.

The Commission asks that commenters who advocate a separate Gulf service area to also discuss whether special interference protection criteria or performance requirements are necessary.^{10/} PetroCom believes that there should be no special interference criteria between Gulf and land based systems. PetroCom does not express an opinion in these comments regarding the mechanism by which the FCC should regulate interference between co-channel

^{8/} *Cellular Service and Other Commercial Mobile Radio Services in the Gulf of Mexico*, WT Docket No. 97-112, *Report and Order*, 17 FCC Rcd 1209 (2001). (“Gulf Cellular Order”).

^{9/} *Gulf Cellular Order* ¶ 36.

^{10/} PetroCom addresses the issue of performance requirements for Gulf AWS spectrum holders in Section IID of these comments, in the more general discussion of performance requirements.

licensees in the AWS Bands.^{11/} However, regardless of the formula chosen, the same formula should be applied to Gulf and land based licensees.

PetroCom is mindful that in the Gulf Cellular Order the FCC established different methods to calculate the service area boundaries of Gulf cellular and land based cellular systems. PetroCom challenged that element of the Gulf Cellular Order and PetroCom's Petition for Reconsideration remains pending.^{12/} However, even if the FCC upholds the Gulf Cellular Order on this matter, there is no reason for it to extend the rationale of the Gulf Cellular Order to the AWS Bands. There is no evidence that the propagation characteristics of the AWS Bands is the same as the characteristics of cellular spectrum.^{13/} Therefore, unless the FCC receives compelling evidence to the contrary, it should presume that the AWS Bands will have different propagation characteristics than cellular spectrum and adopt a different approach to measuring service area boundaries than it did in the Gulf Cellular Order.

B. The Commission Should Permit Flexible Use of the AWS Spectrum, at Least in Rural Areas

The Commission should allow the AWS Bands to be used for fixed and mobile services, at least in rural areas. PetroCom agrees with the Commission's assessment that to promote innovative services and encourage the flexible and efficient use of the AWS spectrum, the Commission's service rules for these bands should permit a licensee to use this spectrum for

^{11/} *NPRM* ¶ 55.

^{12/} *Cellular Service and Other Commercial Mobile Radio Services in the Gulf of Mexico, Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules*, WT Docket No. 97-112, CC Docket No. 90-6, Petroleum Communications, Inc. Petition for Partial Reconsideration (filed April 3, 2002).

^{13/} Indeed, AWS spectrum should not be expected to propagate as far as cellular spectrum. Therefore, the concerns that the FCC expressed regarding the propagation of cellular spectrum over water should not be relevant to the AWS Bands.

fixed and mobile services. Permitting flexible use of this spectrum also would satisfy the criteria specified in section 303(y)(2) of the Communications Act.

Section 303(y)(2) grants the Commission authority to permit flexible use of spectrum if the Commission finds that such use: (1) is in the public interest; (2) would not deter investment in communications services and systems, or technology development; and (3) would not result in harmful interference among users.^{14/} The designation of the AWS Bands for flexible use satisfies these three criteria, at least in rural areas like the Gulf. Such a designation is in the public interest because it will allow licensees the freedom to determine the services the public desires. This public interest benefit is particularly acute in the Gulf, where licensees may wish to use the AWS Bands to provide both 3G type mobile wireless telephony services or, for example, broadband wireless internet access on drilling platforms, where access to both services will be limited. Contrary to deterring investment, allowing the AWS Bands to be used on a flexible basis will promote investment in different technologies to be used in providing service in the AWS Bands.

The third criteria specified in Section 303(y)(2) that the FCC must evaluate in determining whether to permit flexible use of spectrum is whether there will be harmful interference among users. PetroCom recognizes that there may be challenges in the use of the AWS Bands for both fixed and mobile purposes in densely populated areas. However, in rural areas, and particularly in the Gulf, mobile base stations and fixed stations may be hundreds of miles apart. Moreover, in less densely populated areas, where all of the licensed spectrum may not be necessary to meet fixed or mobile needs, the FCC should permit it to meet the needs of both. Therefore, regardless of whatever difficulties there may be in using the AWS Bands for

^{14/} 47 U.S.C. § 303(y)(2).

both fixed and mobile uses in metropolitan areas, the FCC should permit flexible use in rural areas.

C. The Commission Should License the AWS Bands in Paired Configuration

The FCC should license the AWS Band in a paired configuration. Adopting a paired licensing approach would afford licensees the flexibility to operate with either frequency division duplex (“FDD”) or time division duplex (“TDD”) technology.^{15/} As the Commission notes, paired blocks would provide each licensee with a separate transmit and receive channel and would, therefore, accommodate traditional wireless network architectures.”^{16/} Conversely, if the FCC did not license the AWS Band in a paired configuration, it would dictate that the spectrum must be employed with TDD technology. While TDD technology may be an ideal choice for some applications, it may not be for others. Moreover, creating a licensing scheme that dictates the use of a particular technology is contrary to recent FCC decisions and precedent that encourage the use of multiple technological platforms.^{17/}

^{15/} While PetroCom supports licensing the AWS Bands in a paired configuration, it does not support requiring the use of a particular technology. Therefore, licensees could choose to use the paired spectrum in with TDD technology for unpaired operations. Similarly, it does not believe the FCC should impose requirements regarding the “direction” in which transmissions on either side of the pair must occur.

^{16/} *NPRM* ¶ 31.

^{17/} See *Amendments of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, MM Docket No. 97-217, 13 FCC Rcd 19112 (1998), *recon.* 14 FCC Rcd 12764 (1999), *further recon.*, 15 FCC Rcd 14566 (2000); *Amendment to Parts 1, 2, 27 and 90 of the Commission’s Rules to License Services in the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands*, Report and Order, 17 FCC Rcd 9980, ¶¶ 140, 144 (May 24, 2002); *Amendment of the Commission’s Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services*, WT Docket No. 96-6, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8965 (1996).

D. The Commission Should Adopt Meaningful Performance Requirements for Licensees in the AWS Bands

To ensure the prompt delivery of service to rural areas, to prevent stockpiling or warehousing of spectrum, and to promote investment in and rapid deployment of new technologies and services, the FCC should require licensees in the AWS Bands to meet meaningful performance requirements. The FCC has adopted a variety of different performance requirements for recently auctioned wireless services.^{18/} PetroCom believes that performance requirements should, on the one hand, be stringent enough to encourage rapid deployment of service, and on the other, be flexible enough to permit licensees to demonstrate deployment of the spectrum in a variety of ways. Regardless of the performance criteria selected, the FCC should permit licensees in rural areas in general, and the Gulf in particular, flexibility to demonstrate how the level of service they provide meets the relevant criteria. In light of the lack of density of the Gulf, a carrier may not be able to demonstrate that it serves a specified percentage of the geographic area covered.^{19/} Instead, carriers should be provided with the flexibility to demonstrate that they are employing their authorized spectrum in a manner that serves the public interest.

If a licensee fails to meet the performance requirements, such failure should result in forfeiture or nonrenewal of the license and the licensee should be ineligible to retain it.

Adopting these performance requirements should permit flexibility in system design and market

^{18/} *Amendments to Parts 1, 2, 27 and 90 of the Commission's Rules to License Services in the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands*, Report and Order, 17 FCC Rcd 9980 (May 24, 2002); *Amendments to Parts 1, 2, 87 and 101 of the Commission's Rules to License Fixed Services at 24 GHz*, Report and Order, 15 FCC Rcd 16934 (2000); *Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, WT Docket No. 99-168, *First Report and Order*, 15 FCC Rcd 476 (2000).

development, and provide a clear and expeditious accounting of spectrum use by licensees to ensure that service is indeed being provided to the public.

III. CONCLUSION

PetroCom hereby respectfully submits the foregoing comments and asks the FCC to proceed in a manner consistent with the views expressed herein.

Respectfully submitted,

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^{19/} Because there is no population in the Gulf, and performance criteria based on population would be meaningless.