COVINGTON & BURLING
1201 PENNSYLVANIA AVENUE, N. W.
P.O. BOX 7566
WASHINGTON, D.C. 20044-7566
(202) 662-6000
FACSIMILE: (202) 662-6291

LECONFIELD HOUSE
CURZON STREET
LONDON W1Y 8AS
ENGLAND
TELEPHONE: 44-171-495-5655
FACSIMILE: 44-171-495-3101

KUNSTLAAN 44 AVENUE DES ARTS
BRUSSELS 1040 BELGIUM
TELEPHONE: 32-2-549-5230
FACSIMILE: 32-2-502-1598

CARA E. MAGGIONI
DIRECT DIAL NUMBER
(202) 662-5162

DIRECT FACSIMILE NUMBER
(202) 778-5162

July 12, 1999

VIA HAND DELIVERY

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

Re: In the Matter of VIRTUAL GEOSATELLITE, LLC, Petition for Rule Making To Make Available C-Band Spectrum for Non-Geostationary Fixed-Satellite Service Gateway Operations in the U.S.

Dear Ms. Salas:

On behalf of Pathnet, Inc., enclosed for filing are the original and nine copies of Pathnet Inc.'s opposition to the above-captioned petition. Also included is a "Return Copy" of this filing. Please date-stamp this copy and return it to the courier delivering this package. Please contact me if you have any questions regarding this filing.

Respectfully Submitted,

Cara Maggioni

Cara Maggioni

Enclosure

cc: Michael Lubin, Esq.
Kurt Wimmer, Esq.

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List ABCDE

Before the
Federal Communications Commission
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
VIRTUAL GEOSATELLITE, LLC	)	
	)	
Petition for Rule Making to Make Available C-Band Spectrum for Non-Geostationary Fixed-Satellite Service Gateway Operations in the U.S.	)	RM-9650
	)	
To: The Commission	)	

PATHNET INC.'S OPPOSITION TO PETITION FOR RULE MAKING

Pathnet Inc. ("Pathnet"), by and through its attorneys, hereby submits to the Federal Communications Commission ("FCC" or "Commission") this Opposition to Virtual Geosatellite, LLC's ("Virtual Geo") Petition for Rule Making.[1] Pathnet offers sophisticated, low-cost, digital, point-to-point microwave telecommunications services to various under-served and second- and third-tier U.S. markets. Pathnet's strategy has been to partner with owners of telecommunications assets, such as the owners of utility, pipeline, and railroad companies, to upgrade and aggregate existing infrastructure to a state-of-the-art synchronous optical network

[1] Petition for Rule Making To Make Available C-Band Spectrum for Non-Geostationary Fixed-Satellite Service Gateway Operations in the U.S., RM-9650, (released June 11, 1999) (NOTICE) (hereinafter "Petition".)

("SONET".)[2] Pathnet in turn has offered network services to other customers, including inter-exchange carriers, local exchange carriers, Internet service providers, Regional Bell Operating Companies, cellular operators, and resellers. The bandwidth created from Pathnet's network is subject to the highest standards of reliability, is used for mission-critical communications needs, and is provided at competitive prices in second- and third-tier rural markets. Pathnet's service is used for monitoring pipelines and energy systems, coordinating railroad operations, as well as serving the communications needs of under-served rural markets. The integrity of the C-Band is essential to Pathnet's provision of these critically important communications services, some of which are vital to its customers' continued compliance with essential operational and safety guidelines and regulations applicable to pipelines, railroads, and energy systems.

Specifically with respect to Virtual Geo's Petition, Pathnet has numerous – approximately 278 microwave links and 2000 licensed frequencies – in the 5.925- 6.725 GHz band, which Virtual Geo has petitioned be made available for use by gateway links for nongeostationary orbit ("NGSO") fixed satellite service ("FSS"). Pathnet anticipates applying for and utilizing additional links and frequencies in the future. In addition, the lower 6 GHz spectrum has been identified as relocation spectrum for 2 GHz licensees, and eventually for relocation of 2.1 GHz licensees.[3] Pathnet fears that addition of NGSO FSS at this time would overload a highly congested band and would necessarily compromise the use of the band by fixed services. In

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[2] As a result of Pathnet's substantial capital investment with these partners, as of March 31, 1999, Pathnet had 2,100 route miles of completed network, 4,600 route miles of network under construction, and 7,800 route miles of network under commitment.

[3] See Amendment of Parts 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by Mobile-Satellite Service, ET Docket 95-18, First Report and Order & Further Notice of Proposed Rulemaking, 12 FCC Rcd 7388 (1997).

addition, Virtual Geo has not made a sufficient showing in either its application[4] for launch of its new NGSO technology or the present Petition that opening the C-Band to its use would be the most desirable allocation of the spectrum.

I. THE COMMISSION SHOULD DENY VIRTUAL GEO'S PETITION FOR RULE MAKING TO PERMIT THE OPERATION OF NGSO FSS GATEWAYS AT 5.925-6.75 GHz AND 3.7-4.2 GHz.

Under present FCC rules, geostationary orbit ("GSO") fixed satellite services ("FSS") share the 3.7-4.2 GHz and 5.925-6.425 GHz portions of the C-Band on a co-primary basis with terrestrial fixed service ("FS"), including common carrier microwave systems such as Pathnet.[5] In its Petition, Virtual Geo proposes to open this already congested spectrum to make room for its gateway links, an unproven use which has not been demonstrated to be the most efficient use or even in the public interest. Furthermore, permitting NGSO FSS operations in the C-Band will decimate any further development of the important FS operations – operations which have already been forced to relocate and redevelop as a result of previous spectrum allocations. Continued and unimpeded development of terrestrial FS systems, such as Pathnet's network, is necessary to provide the reliable communications services demanded by Pathnet's customers, including those customers who are in the business of delivering essential transportation and energy services safely to the public. Pathnet urges the Commission to leave the lower 6 GHz allocations intact.

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[4] Application of Virtual Geosatellite, LLC for Authority to Launch and Operate a Global Fixed-Satellite Service System Employing Non-Geostationary Satellites in Sub-Geosynchronous Elliptical Orbits in Ku-Band and C-Band, File No. SAT-LOA-19990108-00007 (Filed January 8, 1999)(hereinafter "Application.")

[5] 47 C.F.R. 25.202(a)(1)

1. NGSO FSS Gateway Operation in the C-Band FSS Spectrum Will Inevitably Cause Substantial Interference with Incumbent Licensees.

Virtual Geo claims that it will impose no noticeable degradation to the quality of service or availability of terrestrial links, impose no operational constraints on terrestrial systems, or constrain future growth. Pathnet has reviewed both the Petition and Virtual Geo's Application for authority to launch and has found little detail supporting its claims and believes instead that NGSO FSS will cause substantial additional interference in the C-Band.

Specifically, Virtual Geo has provided little data to support its assertion about the feasibility of sharing and coordination between NGSO FSS and terrestrial FS in the lower 6 GHz or 4 GHz. In fact, in its Application, Virtual Geo does not even mention the former frequency bands at all when discussing interference protection for FS, suggesting that Virtual Geo has not given sufficient attention to addressing potential interference in the subject bands.[6] Further, Virtual Geo in another rule making process has expressed concerns about the feasibility of coordinating with certain terrestrial FS (i.e., point-to-multipoint fixed service.)[7] In contrast, in the instant Petition and Application, Virtual Geo asserts that FS and NGSO FSS are compatible and will be coordinated.

Pathnet believes that this newest satellite addition will not be amenable to coordination with terrestrial FS for several reasons. FS sites are determined by customer locations and line of sight, and Pathnet's network in particular consists of many small customers each of whom will require consideration. In addition, coordination with NGSO gateways will be exceptionally

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[6] See Application at 73 – 75.

[7] See Reply Comments of Virtual Geosatellite, LLC, In the Matter of Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range and Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by

difficult, as their antennae move continuously rather than operate from a fixed point. Even if newer technologies, such as Virtual Geo's virtual geostationary satellite orbit ("VGSO") system, limit the movement of antennae, Virtual Geo has not been able to demonstrate that the limited movement of its VGSO will provide any more protection from interference than existing NGSO FSS. Congestion concerns remain serious even were we to give credence to Virtual Geo's claims that the new VGSO technology offers less interference than traditional NGSO FSS and is more analogous to GSO FSS. FS in many cases has been squeezed out of spectrum by proliferation of GSO earth stations and allowing new players in the spectrum simply squeezes an elephant in the clown car at the circus. Virtual Geo has even conceded the "massive" use by GSO at the petitioned frequencies.[8] Incidentally, Pathnet notes that the Petition requests a change in the rules that would allow all NGSO FSS to operate in the C-Band, not simply those employing VGSO. In any case, Pathnet vigorously opposes opening the C-Band further to either or both types of NGSO FSS. Inevitably, if Virtual Geo's Petition were to be granted, satellites will be launched, and interference will ensue – imposing an unfair burden upon incumbents and their own developing technologies.

2. Virtual Geo has not even demonstrated that location in the C-Band is necessary, and granting its Petition would impose significant costs and disruption to a vital and thriving new technology.

Pathnet's digital wireless network evolved out of a FCC regulatory action that required hundreds of private microwave network users to reconfigure their networks by relocating to a different part of the spectrum. Responding to the needs of the displaced carriers, Pathnet created a nationwide infrastructure to operate at the new frequency. Pathnet in turn has expanded the

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Direct Broadcast Satellite Licensees and their Affiliates, ET Docket No. 98-206 (RM-9147, RM-9245) at 19 (submitted April 14, 1999).

[8] See Application at 10.

network uses to provide low-cost, high-quality, digital communications capacity to customers who demand the high industry standards of reliability that can only be provided by terrestrial FS.

Pathnet currently has established networks, at significant capital investment, in twelve states, and network construction is underway in thirteen additional states. These networks are designed to bring communications services to non-urban markets. Admitting NGSO FSS at the expense of these under-served users would be against the public interest and highly inequitable. The establishment of the Pathnet network, and others similar to it, was itself a response to a relocation that caused great expense and disruption. Relocation caused many companies to expend a large amount of capital to replace a significant portion of their telecommunications infrastructure to comply with the FCC mandate. Repeating this situation after just a few years with the same players would be exceedingly unfair and highly disruptive to the nascent infrastructure, essentially forcing the same players to rebuild networks at significant additional costs and effectively erasing the accomplishments of their substantial investments in this area.

The public need and benefits afforded by Virtual Geo's Petition have simply not been demonstrated sufficiently enough to warrant the detrimental effects on the existing terrestrial services in the spectrum, which have clearly demonstrated their operations serve the public interest. Rather, Virtual Geo has merely expressed that it would be easier to establish operations in frequencies where GSS currently operates due to their existing infrastructure. Virtual Geo has failed to demonstrate the necessity for its new service to use the C-Band. Nothing in the record points to a shortage of spectrum for satellite, whereas terrestrial operations have battled against the ever-decreasing spectrum for their services. Virtual Geo's current Application requests permission to launch and operate gateways in 12.75-13.25 GHz, 13.8-14.0 GHz, 10.7-11.2GHz, as well as the bands encompassed in their Petition – 5.925-6.725 GHz, and 3.7-4.2

GHz. Virtual Geo's Petition fails to establish why its operations require such extensive use of spectrum – 2,000 MHz – nor why it is in the public interest to once again relocate FS systems.

3. Granting Virtual Geo's Premature Petition before the Current Ku-Band Rule Making Process is Complete will Encourage Similar "Back-Door" Claims to Spectrum.

It would be premature to consider Virtual Geo's petition at this time, before the rule making process for the Ku-Band raising the exact same concerns has been completed. [9] The current Ku-Band rule making has raised numerous technical issues that must be addressed before endangering more spectrum users. There is little value in adopting provisional rules before the technical issues have seen further discussion. Virtual Geo's Petition and Application portends a hazardous precedent of attempting to dodge objections raised in the Ku-Band rule making by simply proposing another rule making that raises identical concerns.

The Commission has recognized in its current rule making with respect to the Ku-Band that while ITU regulations may allow for NGSO FSS gateway operations, the domestic spectrum allocation must necessarily offer more careful consideration to terrestrial operations in its analysis. The Commission has noted the need for more study of the requirements necessary for NGSO FSS in order to ensure the protection of terrestrial services, including requirements such as exclusion zones and minimum antennae size.[10] Virtual Geo's Petition and Application, on the other hand, make no effort to address these issues. For example, Virtual Geo submits that its

[9] Notice of Proposed Rule Making, In the Matter of Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range and Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Direct Broadcast Satellite Licensees and their Affiliates, ET Docket No. 98-206 (RM-9147, RM-9245) , (adopted November 19, 1998.)

[10] Id.

gateways could very well be located at corporate offices,[11] which surely would be in contradiction of exclusionary zones around populous cities and intercity links. The Commission has suggested a limit to the number of gateway sites, and Virtual Geo has responded by not proving that its interference protections are adequate but by simply requesting more spectrum. Clearly these are just two examples proving that admitting NGSO FSS to the C-Band without further study would be irresponsible and would defeat the Commission's stated objective of preventing interference where possible, rather than allowing it to occur only after significant investment by incompatible parties.

II. CONCLUSION.

For the reasons set forth above, Pathnet vehemently opposes opening the already overcrowded C-Band to any further allocation. Such a decision at this point for an unproven technology with questionable sharing capabilities would not only cause irreparable harm to terrestrial FS systems recovering from the last relocation, but would also unfairly substantially favor satellite systems over equally deserving and essential FS users. Pathnet respectfully requests the Commission deny Virtual Geo's petition to initiate a rule making at this time.

Respectfully Submitted,
PATHNET INC.

By its attorneys:

Cara Maggioni
Kurt Wimmer
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Washington, D.C. 20044-7566
(202) 662-6000

July 12, 1999

[11] See Application at 12.

CERTIFICATE OF SERVICE

I, Cara Maggioni, hereby certify that a true and correct copy of the foregoing "Opposition to Petition for Rule Making" was this July 12, 1999 sent by hand to the following:

Raul R. Rodriguez
Stephen D. Baruch
David S. Keir
Counsel to Virtual Geosatellite, LLC
Leventhal, Senter & Lerman P.L.L.C.
2000 K. Street, N.W., Ste. 600
Washington, D.C.20006

Julie Garcia
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Thomas Tycz, Chief
Satellite and Radiocommunication Division
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Cecily Holiday
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Cassandra Thomas
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Mindy Ginsburg
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Harry Ng
International Bureau
Federal Communications Commission
445-12th Street, SW
Room 6C749
Washington, DC 20554

Karl Kensinger
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Fern Jarmulnek
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Damon Ladson
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Ronald Repasi
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Kim Baum
International Bureau
Federal Communications Commission
445-12th Street, SW
Washington, DC 20554

Cara Maggioni

Cara Maggioni