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

In the Matter of	)	
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	
Federal-State Joint Board on Universal Service	)	CC Docket No. 96-45
	)	
Lifeline and Link Up	)	WC Docket No. 03-109
	)	
Universal Service Contribution Methodology	)	WC Docket No. 06-122
	)	
Numbering Resource Optimization	)	CC Docket No. 99-200
	)	
Implementation of the Local Competition Provisions in the Telecommunications Act of 1996	)	CC Docket No. 96-98
	)	
Developing a Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	CC Docket No. 99-68
Intercarrier Compensation for ISP-Bound Traffic	)	WC Docket No. 04-36
IP-Enabled Services		

REPLY COMMENTS

Virtual Geosatellite, LLC ("Virtual Geo") and AtContact Communications, LLC ("AtContact") submit these Reply Comments responding to the commenting parties that addressed the issue of satellite broadband services in the above-captioned notice of proposed rulemaking.[1] In the *Comprehensive Reform Order and FNPRM*, the

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[1] *High Cost Universal Service Support, Federal-State Joint Board on Universal Service, Lifeline and Link Up, Universal Service Contribution Methodology, Numbering Resource Optimization, Implementation of the Local Competition Provisions in the*

Commission proposed three alternative models for universal service reform, and in two of those proposals (Alternatives A and C) the Commission tied universal service support to a commitment by the carrier to provide broadband service throughout its territory – but, the Commission specified that "[an Eligible Telecommunications Carrier] cannot use satellite broadband technology to meet its obligations under this order, however, absent a waiver from the Commission."[2] Virtual Geo and AtContact, along with many of the commenting parties, object to this discriminatory treatment of satellite broadband services.

Virtual Geo is planning on deploying a global space-based networking and internet access service using a patented, non-geostationary orbit (NGSO) elliptical constellation of satellites. The use of this unique orbit optimizes coverage of land masses and minimizes interference to other terrestrial or satellite services. The Virtual Geo satellite constellation will support high speed, multi-megabit per second digital traffic and applications. Moreover, the system uses modest sized user terminals (18" antennas),[3] and these broadband services will be available throughout the United States (including all of

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Telecommunications Act of 1996, Developing a Unified Intercarrier Compensation Regime, Intercarrier Compensation for ISP-Bound Traffic, IP-Enabled Services, CC Docket Nos. 96-45, 99-200, 96-98, 01-92, 99-68, WC Docket Nos. 05-337, 03-109, 06-122, 04-36, Order on Remand and Report and Order and Further Notice of Proposed Rulemaking, FCC 08-262 (rel. Nov. 5, 2008) (*Comprehensive Reform Order and FNPRM*).

[2] *Comprehensive Reform Order and FNPRM,* Appendix A at ¶ 27. In Alternative C, the Commission proposed a similar limit on utilizing satellite service to meet the broadband obligation, but did specify that in the case of very high cost loops, up to 2% of the lines would qualify for an automatic waiver. Appendix C at ¶ 27.

[3] The Virtual Geo system will use active phased array satellite antennas in order to compensate for the satellites' altitude and movement, and in this way will maintain a beam footprint fixed on earth.

Alaska and Hawaii) and its territories.[4] Thus, the Virtual Geo system will be able to ensure that all Americans have access to broadband services, even if they reside in remote and presently unserved areas.

AtContact is a provider of satellite-based services to Alaska and has licenses for a constellation of Ka-band satellites, both NGSO and GSO, that are designed to provide expanded broadband services to unserved and underserved locations in the United States and elsewhere. AtContact joins Virtual Geo in expressing its strong opposition to the requirement that providers of satellite broadband technology be required to file a waiver to fulfill a carrier's obligations to offer broadband throughout its territory to receive USF funding. The fact is that satellite technology offers clear advantages over terrestrial means of providing broadband services to a variety of rural areas. AtContact today provides just such services to rural areas of Alaska using leased satellite facilities, and has been doing so for some years. There is simply no justification for uniquely classifying satellite technology differently from other technologies for purposes of satisfying a carrier's obligation to provide broadband services throughout its territory in order to qualify for universal service support.

Virtual Geo and AtContact are concerned because the Commission's proposals would not allow such satellite broadband services to "count" towards an eligible telecommunications carrier's obligation to provide broadband services throughout its

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[4] In the Virtual Geo NGSO elliptical constellation, there will be one satellite active in each active arc at a time, with the satellites active while between 17,500 km and 27,300 km altitude. The satellites will spend approximately 4 hours and 48 minutes in active arc per eight hour revolution. The constellation is designed with active arcs fixed over important markets, and there will be six in the Northern Hemisphere. The constellation design assures that there will be full-time coverage of all of the United States.

territory in order to qualify for universal service support. In order for an eligible telecommunications carrier to incorporate satellite broadband services into its service mix to meet the Commission's requirements, it would need to go through a waiver process that is likely to be burdensome, uncertain and time-consuming – a process that is not imposed on terrestrial broadband services. While Alternative C offers a small measure of relief from needing to obtain a waiver, that "safety valve" is limited to 2% of the carrier's customers. Virtual Geo and AtContact do not believe that the Commission has justified the proposals' disparate treatment of satellite broadband, and many of the commenting parties expressed similar concerns.

Numerous rural carriers with experience and expertise in providing broadband services in remote areas criticized the Commission's failure to allow such carriers to utilize satellite broadband services without the need to obtain a waiver.[5] The Pennsylvania Public Utility Commission criticized the Commission's proposed treatment of satellite broadband service as not being "competitively neutral."[6] The National Telecommunications Cooperative Association (NTCA) observed that if there were an economically efficient way to provide broadband in remote areas using a technology other than satellite, rural carriers would already be doing so. Thus, NTCA urged the Commission not to limit a rural carrier's technological options as proposed in Alternative

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[5] Indeed, the only commenting party that appeared to support the Commission's proposed limits on satellite broadband services was the Public Utilities Commission of Ohio, but no additional rationale was offered in those comments. Public Utilities Commission of Ohio at p. 43.

[6] Pennsylvania PUC Comments at p. 31.

A and Alternative C.[7] Embarq also noted that the Commission's proposals fail to allow carriers to use satellite technology, which would be a cost-effective means of meeting the new broadband obligations.[8]

In a similar vein, the Texas Statewide Telephone Cooperative opposed the limitations on a rural carrier's use of satellite broadband, because in some rural areas it is unlikely to be economically feasible to provide broadband service without using satellite-based technology.[9] Likewise, the Oklahoma Rural Telephone Coalition urged the Commission to allow rural providers to utilize "the most prudent technology available to provide broadband," rather than limiting satellite broadband to 2% of the carrier's customers.[10]

Several other commenting parties specifically criticized the 2% "automatic waiver" as inadequate. The Iowa Telecommunications Association called this proposal a step in the right direction, but suggested that broader relief should be provided to rural carriers.[11] The Mercatus Center similarly indicated that Alternative C's automatic waiver is an "efficiency-enhancing measure," but suggested it could be expanded upon.[12] The Texas Statewide Telephone Cooperative urged the Commission not to impose an

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7 NTCA Comments at pp. 29-30.

8 Embarq Comments at p. 10.

9 Texas Statewide Telephone Cooperative Comments at p. 9.

10 Oklahoma Rural Telephone Coalition Comments at p. 3.

11 Iowa Telecommunications Association Comments at p. 10.

12 Mercatus Center Comments at pp. 3 and 16.

arbitrary 2% cap on satellite broadband services.[13] The National Exchange Carrier Association contends that a carrier must be permitted to use all available technical solutions to deploy broadband, including satellite service in remote areas, suggesting that the 2% limit should be raised to 5% or more.[14] And the Minnesota Independent Coalition suggested that rural carriers with less than 50,000 lines could serve up to 10% of their customers using satellite services without the need for a waiver, and that very small rural carriers (less than 1,000 lines) would be entitled to even greater relief.[15]

Two of the sets of comments addressed the Commission's discriminatory treatment in some detail – the comments filed by Hughes Network Systems and Inmarsat (Hughes/Inmarsat), and the comments filed by the National Rural Telecommunications Cooperative (NRTC). Those commenting parties have years of "real world" experience in providing broadband satellite services. Hughes/Inmarsat and NRTC strongly urge the Commission not to discriminate against satellite broadband services in determining whether an eligible telecommunications carrier is providing broadband services throughout its territory – the Commission should not require a waiver for satellite technology to meet the new broadband requirements. Virtual Geo and AtContact agree with their analysis and conclusion.

As Hughes/Inmarsat and NRTC observe, satellite broadband is frequently the only economically viable means of providing service to sparsely populated areas. While satellite broadband is not as fast as some terrestrial technologies, it is much faster than

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13 Texas Statewide Telephone Cooperative Comments at pp. 9-10.

14 National Exchange Carrier Association Comments at p. 15.

15 Minnesota Independent Coalition Comments at pp. 5-6.

current alternatives and allows customers to take advantage of most Internet and e-commerce applications.[16] Moreover, the *Comprehensive Reform Order and FNPRM*'s justification for the proposed "second class" treatment of satellite broadband – latency and rain fade – are based on outdated and overly simplistic understanding of satellite technology.[17] Satellite broadband is highly reliable and fully capable of meeting consumer demand for broadband services, as demonstrated by its acceptance in the marketplace.

Indeed, Virtual Geo will be able to provide satellite broadband services that are even more robust and reliable than current satellite offerings as a result of its unique satellite constellation. The Virtual Geo satellites' elliptical NGSO deployment will provide much higher elevation angles and lower altitudes than geostationary satellites, thereby enhancing the reliability and reducing the mean latency by more than half. Thus, advances in satellite system design like Virtual Geo's further undercuts the Commission's rationale for treating satellite broadband in a discriminatory manner. There is simply no valid basis for the proposal to single out satellite broadband technology as requiring a waiver in order to fulfill a carrier's proposed obligation to offer broadband throughout its territory to qualify for USF funding.

In sum, Virtual Geo and AtContact urge the Commission to heed the virtually unanimous comments of the satellite service providers and rural telephone companies with "hands on" experience, and allow service providers to fulfill their broadband obligations using satellite technologies without needing to obtain a waiver. Such a policy

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[16] NRTC Comments at pp. 4, 7-8; Hughes/Inmarsat Comments at pp. 10-11.

[17] Hughes/Inmarsat Comments at p. 6; NRTC Comments at p. 5.

will well serve the public interest by fostering the availability of broadband services in remote areas at reasonable rates.

Respectfully submitted,

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