

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

In the Matter of	)	
	)	
Fostering Innovation and Investment in the Wireless Communications Market	)	GN Docket No. 09-157
	)	
A National Broadband Plan for our Future	)	GN Docket No. 09-51

**REPLY COMMENTS OF DBSD NORTH AMERICA, INC.**

DBSD North America, Inc.<sup>1</sup> filed comments earlier in this proceeding as an executive member of the Satellite Industry Association (“SIA”).<sup>2</sup> As stated by SIA, while the *Notice of Inquiry*<sup>3</sup> in the above-captioned proceeding appears largely focused on terrestrial-based services, any meaningful evaluation of the “wireless ecosystem” must also account for the dynamic innovation and investment occurring in satellite operations, services, and technologies.<sup>4</sup> In these Reply Comments, DBSD expands upon SIA’s Comments, specifically identifying the groundbreaking innovations in satellite technology that DBSD has been advancing in recent years. SIA’s Comments have emphasized that, just last year, the Commission observed that

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<sup>1</sup> DBSD (formerly ICO North America) is the parent company of New DBSD Satellite Services G.P. (“New DBSD”) and other subsidiaries. New DBSD was authorized in 2005 to provide Mobile Satellite Service (“MSS”) using a geostationary-orbit satellite. *ICO Satellite Services G.P.*, 20 FCC Rcd 9797, ¶ 1 (IB 2005). In January 2009, New DBSD received approval from the Commission to operate dual mode mobile earth terminals (“METs”) and Ancillary Terrestrial Component (“ATC”) facilities. *New ICO Satellite Services G.P.*, 24 FCC Rcd 171 at ¶¶ 33-34, 68-69 (2009). For convenience, DBSD North America, Inc. and its subsidiaries will be referred to as DBSD.

<sup>2</sup> Comments of the Satellite Industry Association in GN Docket Nos. 09-51, 09-157 (Sept. 30, 2009) (“SIA Comments”).

<sup>3</sup> *In the Matter of Fostering Innovation and Investment in the Wireless Communications Market, A National Broadband Plan For Our Future*, Notice of Inquiry, GN Docket Nos. 09-157 and 09-51, FCC 09-66 (rel. Aug. 27, 2009) (“*Notice of Inquiry*” or “*Innovation NOP*”).

<sup>4</sup> SIA Comments at 1.

“consumers of communications satellite services continue to realize significant benefits in terms of service choice, innovations fostered by technological change and improvements in both space and ground segment, and improvements in service quality.”<sup>5</sup> DBSD’s development of advanced antenna technology, satellite beam forming technology, and its MSS/ATC platform has enabled the more intensive and efficient use of spectrum the Commission seeks to encourage.<sup>6</sup>

In April 2008, DBSD launched the first-of-its kind next generation MSS satellite, G1, operating in the 2100-2200 MHz and 2180-2190 MHz bands. Throughout 2008 and 2009, DBSD has been testing and trialing the first-of its-kind MSS/ATC system. These activities have focused on leveraging the unique advantages of its satellite and ground based beam forming (“GBBF”) system and their capability to support hybrid MSS/ATC services. The G1 S-band phased-array antenna, combined with GBBF, provides the DBSD system with the unprecedented capability to adjust communication beam size, shape, location, power, frequency assignments, and protocol employed – all from the ground. Transmit and receive capacity can be redistributed on a real-time basis. This powerful new capability will allow the DBSD space system to be adapted to changing service needs and to support dynamic interaction with complementary terrestrial systems.

Employing the advanced antenna design along with innovative GBBF technologies, DBSD will be able to implement a variety of air interface protocols in unique and different ways. DBSD’s MSS/ATC system is able to simultaneously support different protocols and air interfaces with different requirements for coverage, power, and interference protection. This capability thus enables the simultaneous provision of a variety of services using multiple

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<sup>5</sup> *Id.* (citing *Second Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services*, Second Report, IB Docket No. 07-252, ¶ 3 (rel. Oct. 16, 2008)).

<sup>6</sup> *Innovation NOI* at ¶ 20.

technology platforms. In addition, the flexibility of DBSD's MSS/ATC system allows the system to be reconfigured as user demand or other market forces dictate.

DBSD has been conducting "Alpha" trials of its hybrid MSS/ATC system and dual-mode mobile devices using the GMR1 air interface and the Digital Video Broadcast – Satellite Handheld ("DVB-SH") standard to test and demonstrate the capabilities of these systems. These Alpha trials have validated hybrid satellite/terrestrial architectures and coverage models, while also demonstrating the differentiated service capabilities of MSS/ATC systems beyond traditional MSS voice and data. The DBSD MSS/ATC trials have demonstrated extremely efficient spectrum and system resource use, as well as ubiquitous nationwide coverage and capacity. Moreover, these trials were the first to show operation of a single frequency network spanning satellite and terrestrial transmitters.

Concurrent with the Alpha trials, DBSD also launched efforts to ensure that the capabilities of its MSS/ATC network can be integrated seamlessly and at low cost into next-generation user devices, thus providing end users with ubiquitous access to advanced communications services. In 2006, DBSD entered into multiple development contracts to study the ability to include satellite communications protocols into cellular chipsets at zero incremental cost. DBSD then launched a development program with QUALCOMM to demonstrate that satellite communication technology could be integrated into a standard cellular chipset, thus enabling efficient and cost-effective integrated terrestrial/satellite services. Qualcomm used its standard chipset development platforms to create a prototype handset running the Geo Mobile Satellite Air-interface (Satellite-EVDO) "GMSA" protocol that DBSD demonstrated to the public at the CTIA Wireless Show in 2009.

With this foundational element in place (*i.e.*, a flip-phone or other small, internal antenna, style handset that communicates with a geosynchronous satellite), DBSD joined with Qualcomm and other MSS operators, TerreStar and Skyterra, to commercialize this technology. In the process, this group is creating a common platform that has the potential to reduce costs for the entire MSS/ATC industry and enhance the competitiveness of the industry. Under this agreement, Qualcomm will integrate satellite and cellular communication technology in select multi-mode mobile baseband chips. Qualcomm will develop the GMSA satellite protocol and include it in the firmware of select upcoming Qualcomm multi-mode baseband chips. Qualcomm will also support the L- and S-Band frequencies, in which Skyterra, DBSD, and TerreStar operate, in select RF processors. The new chips are expected to be available beginning in 2010. Qualcomm will sell and support its hybrid MSS/terrestrial chipsets to mobile device vendors in the same manner it does with its terrestrial wireless chipsets today and at no incremental cost to its customers. This will enable terminal original equipment manufacturers to provide a full range of handhelds and mobile computing devices capable of terrestrial connectivity with 3GPP and 3GPP2 technologies across the L- and S-Bands, as well as a wide range of existing mobile terrestrial bands.

By establishing multiple platforms for IP-based services, DBSD's MSS/ATC system will facilitate more mass market deployment through increased capacity, thus enabling delivery of service to far more customers than traditional two-way voice services have allowed to date. Deploying DBSD's next-generation IP-based platforms for innovative and differentiated offerings will fully leverage unique MSS-based capabilities for advanced services to rural and otherwise unserved areas, enabling the implementation of highly-efficient next generation

mobile networks that will also help meet the growing consumer demand for competitive data services.

## **CONCLUSION**

DBSD requests that the Commission consider these comments in the above-captioned proceeding regarding innovation and investment in the wireless communications market.

Respectfully submitted,

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