

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

In the Matter of
Hughes Network Systems, LLC
Letter of Intent Seeking Access to the United States Market
IBFS File No. SAT-LOI-20091110-00121
Call Sign S2755

DECLARATORY RULING

Adopted: June 17, 2011

Released: June 17, 2011

By the Chief, International Bureau:

I. INTRODUCTION

1. In this Order, we grant Hughes Network Systems, LLC's (Hughes') request for a declaratory ruling to access the U.S. market using a planned Ka-band geostationary satellite orbit (GSO) fixed-satellite service (FSS) space station, SPACEWAY 6 (Call Sign S2755), that will operate under the authority of the United Kingdom at the 90.9° W.L. orbital location. Hughes states that SPACEWAY 6 will be used to provide a variety of two-way communications services to business and residential customers in the United States, including high-speed data services, high-definition video programming, on-demand entertainment, digital music, interactive television, and high-speed Internet access. SPACEWAY 6 will be permitted to provide service to U.S. customers in the 28.35-29.1 GHz and 29.25-30.0 GHz frequency bands (Earth-to-space) and the 18.3-19.3 GHz and 19.7-20.2 GHz frequency bands (space-to-Earth) once Hughes completes coordination with Federal satellite systems operating in the downlink band, and submits a copy of the U.K. space operations authorization in the public record in this proceeding. U.S. operations in the 28.6-29.1 GHz frequency band (Earth-to-space) will be on a secondary basis to stations operating in this band on a primary basis. Further, because there is no designation for GSO FSS in the 18.8-19.3 GHz band, U.S. operations in this band will be on a non-harmful interference basis to other authorized operations. Granting Hughes' request has the potential to stimulate competition in the United States and provide consumers more alternatives in communications providers and services.

II. BACKGROUND

2. On June 18, 2008, Hughes filed a request to serve the U.S. market from its SPACEWAY 6 space station at the 90.9° W.L. orbital location. Hughes amended this request in June 2009 and in November 2009. Hughes proposes to operate in the 28.35-29.1 GHz and 29.25-30.0 GHz frequency

1 Earth and space stations operating on a primary basis are protected against interference from stations of secondary services. Stations operating on a secondary basis cannot cause harmful interference to or claim protection from harmful interference from stations of a primary service. See 47 C.F.R. §§ 2.104(d) and 2.105(c). Non-conforming services may be provided only on a non-harmful interference basis to any authorized service and may not claim interference protection from those services

2 Hughes Network Systems, LLC, Letter of Intent, IBFS File No. SAT-LOI-20080618-00130, filed June 18, 2008.

3 Hughes Network Systems, LLC, Amendment, IBFS File No. SAT-AMD-20090608-00067, filed June 8, 2009.

4 Hughes Network Systems, LLC, Letter of Intent, IBFS File No. SAT-LOI-20091110-00121, filed November 10, 2009 (LOI). This filing reflected changes to the design of SPACEWAY 6, but did not change the orbital location or (continued...)

bands (Earth-to-space) and the 18.3-19.3 GHz and 19.7-20.2 GHz frequency bands (space-to-Earth). Hughes proposes to use the 18.8-19.3 GHz band on a non-harmful interference basis.<sup>5</sup> Hughes also requests waiver of Section 25.114(c)(4)(iii) of the Commission's rules, which requires applicants to identify which antenna beams are connected or switchable to each transponder. Hughes also seeks waiver of Footnote NG 165 to the United States Table of Frequency Allocations, which limits operations in the 18.8-19.3 GHz band to non-geostationary satellite orbit (NGSO) systems.<sup>6</sup>

3. Hughes' market access request was placed on Public Notice on January 15, 2010.<sup>7</sup> Ciel Satellite Limited Partnership (Ciel) filed comments relating to international coordination issues but did not oppose grant of the application.<sup>8</sup> Ciel has received an approval in principle from Industry Canada to operate a Ka-band FSS space station at the 91° W.L. orbital location.<sup>9</sup> Ciel asks us to impose conditions on any market access grant that would require Hughes to terminate operations on SPACEWAY 6 once Ciel launches its Ka-band space station, if Hughes and Ciel have not reached a coordination agreement. Ciel also asks us to require Hughes to notify its customers of this possible termination of service. Hughes filed reply comments.<sup>10</sup>

Continued from previous page \_\_\_\_\_

add new frequency bands. Consequently, we treated the filing as an amendment to the 2008 Letter of Intent, rather than as a Letter of Intent for a new satellite. See Policy Branch Information, Satellite Space Applications Accepted for Filing, *Public Notice*, Report No. SAT-00659 (Jan. 15, 2010) ("*January 15, 2010 Public Notice*").

<sup>5</sup> LOI at 6.

<sup>6</sup> LOI at 13-16. Hughes also sought a waiver of Section 25.137(d) of the Commission's rules, which limits non-U.S. space station operators to a total of five pending U.S. market access requests in a particular frequency band at any one time. At the time it filed the November 2009 market access request for SPACEWAY 6, Hughes had five other pending requests for U.S. market access, including the previous request for SPACEWAY 6 filed in June 2008. LOI at 11-12, 15-16. Because the November 2009 request did not change SPACEWAY 6's proposed orbital location or add any new frequency bands, we treated the 2009 request as an amendment to the 2008 request. Further, to avoid confusion, we closed the 2008 request in the International Bureau Filing System. See *January 15, 2010 Public Notice*. Consequently, a waiver of Section 25.137(d) of the Commission's rules is not needed.

<sup>7</sup> *January 15, 2010 Public Notice*.

<sup>8</sup> Comments of Ciel Satellite Limited Partnership, filed Feb. 26 2010 at 2 (Ciel Comments).

<sup>9</sup> Ciel License 8, File No. 46215-1 (156295 RH), <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf09017.html> (last visited on February 8, 2011) (Ciel License 8).

<sup>10</sup> Reply Comments of Hughes Network Systems, LLC filed Feb. 26, 2010. On February 28, 2011, an application was filed to transfer control of Hughes Communications, Inc. and its subsidiaries, including Hughes Network Systems, to EchoStar Corporation. Hughes Communications, Inc., Transferor, and EchoStar Corporation, Transferee, Consolidated Application for Authority to Transfer Control, LOI, IBFS File Nos. SAT-T/C-20110228-00041 and -00042, SES-T/C-20110228-00221, -00222, -00223 and -00224, and Experimental License File Nos. 0001-EX-TC-2011, 0002-EX-TC-2011 and 0003-EX-TC-2011 (filed Feb. 28, 2011), as corrected by Erratum (filed Mar. 2, 2011). BRH Holdings GP, Ltd, Transferor, and EchoStar Corporation, Transferee, Seek FCC Consent to Transfer Control of Hughes Communications, Inc., Hughes Network Systems, LLC and HNS License Sub, LLC, Pleading Cycle Established, *Public Notice*, IB Docket No. 11-55, DA 11-518, (rel. Mar. 18, 2011). The transfer of control was granted on June 8, 2011. BRH Holdings GP, Ltd., Transferor and EchoStar Corporation, Transferee, Applications for Consent to Transfer Control of Hughes Communications, Inc., Hughes Network Systems, LLC, and HNS License Sub, LLC, *Order*, IB Docket No. 11-55, DA 11-1015 (June 8, 2010).

### III. DISCUSSION

#### A. DISCO II Analysis

##### 1. General Framework

4. The Commission's *DISCO II Order* implemented the market-opening commitments made by the United States in the World Trade Organization (WTO) Agreement on Basic Telecommunications Services.<sup>11</sup> In particular, the *DISCO II Order* established a framework under which the Commission will consider requests for non-U.S.-licensed space stations to serve the U.S. market. This framework considers the effect on competition in the United States;<sup>12</sup> eligibility and operating (*e.g.*, technical) requirements;<sup>13</sup> spectrum availability;<sup>14</sup> and national security, law enforcement, foreign policy, and trade concerns.<sup>15</sup> We evaluate whether to authorize SPACEWAY 6 to serve the U.S. market under this framework.

##### 2. Competition Considerations

5. In the *DISCO II Order*, the Commission established a rebuttable presumption that entry by non-U.S. space stations licensed by WTO Members to provide services covered by the U.S. commitments under the WTO Basic Telecom Agreement will further competition in the United States.<sup>16</sup> These commitments include FSS, but specifically exclude Direct-to-Home (DTH) service, Direct Broadcast Satellite Service (DBS), and Digital Audio Radio Service (DARS).<sup>17</sup> This means that we will presume that WTO-member licensed satellites providing WTO-covered services satisfy the competition component of the public interest analysis.<sup>18</sup>

6. In this case, the presumption in favor of entry applies to SPACEWAY 6, which will operate under the supervision of the United Kingdom, a WTO Member.<sup>19</sup> There is nothing in the record that rebuts the presumption that SPACEWAY 6's entry into the U.S. market is pro-competitive. Therefore, we conclude that SPACEWAY 6's proposed entry will enhance competition for FSS in the U.S. market. Consistent with Hughes' market access request, the scope of this grant does not include provision of DTH, DBS, or DARS in the United States.

##### 3. Technical Qualifications

7. The Commission's technical criteria for geostationary Ka-band space stations are

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<sup>11</sup> Amendment of the Commission's Regulatory Policies to Allow Non-U.S.-Licensed Space Stations to Provide Domestic and International Satellite Service in the United States, *Report and Order*, 12 FCC Rcd 24094 (1997) ("*DISCO II*").

<sup>12</sup> *Id.* at 24107-56, ¶¶ 30-145.

<sup>13</sup> *Id.* at 24159-69, ¶¶ 151-74.

<sup>14</sup> *Id.* at 24157-59, ¶¶ 146-50.

<sup>15</sup> *Id.* at 24169-72, ¶¶ 175-82.

<sup>16</sup> *Id.* at 24112, ¶ 39.

<sup>17</sup> *Id.* at 24104, ¶ 25.

<sup>18</sup> *Id.* at 24112, ¶ 39; 24157, ¶ 143.

<sup>19</sup> See Members and Observers, [http://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/org6\\_e.htm](http://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm) (a list of WTO members), last visited March 16, 2011.

predicated upon two-degree orbital spacing between space stations.<sup>20</sup> This policy permits the maximum use of the geostationary space station orbit.<sup>21</sup> All applicants, including applicants proposing to use non-U.S. space stations to provide service in the United States, must demonstrate that the proposed operations are two-degree compliant.<sup>22</sup> We conclude that operations with SPACEWAY 6 will be two-degree compliant.

8. We next address Hughes' waiver requests related to certain technical and operational rules. We discuss these requests below.

*i. Beam Interconnectivity Information.*

9. Section 25.114(c)(4)(iii) of the Commission's rules requires applicants to identify which antenna beams are connected or switchable to each transponder and tracking, telemetry, and control (TT&C) function.<sup>23</sup> The rule requires applicants to provide interconnectivity information for all of the antenna beams in its system. In its application, Hughes states that its SPACEWAY 6 satellite network has fifteen primary gateway earth stations and two backup gateway earth stations.<sup>24</sup> Hughes provides information on the interconnectivity between the fifteen primary gateway beams, for a total of 500 interconnections. Hughes states that providing interconnectivity information with respect to the two backup gateway beams would be unduly burdensome, requiring it to provide 1,000 additional beam interconnections. Hughes also states that such information is unnecessary because these beams are associated with spare/redundant capacity associated with two backup gateways.<sup>25</sup> Hughes therefore requests a partial waiver of Section 25.114(c)(4)(iii) of our rules.

10. We agree that the information Hughes provided in its application is sufficient to allow us to analyze SPACEWAY 6's beam capacity, and that requiring Hughes to submit information regarding 1,000 interconnections for back-up facilities is unduly burdensome and unnecessary. Accordingly, we grant Hughes' waiver request. Hughes will, however, be required to submit this information in connection with any licensing of the two back-up gateways or approval of operations between SPACEWAY 6 and those gateways.

*ii. Secondary Operations.*

11. Hughes proposes that operations in the 28.6-29.1 GHz band (Earth-to-space) would be on a non-harmful interference basis relative to other services with superior status in the bands. In particular, the Commission has designated the 28.6-29.1 GHz band for primary use by NGSO FSS systems, with a

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<sup>20</sup> Licensing of Space Stations in the Domestic Fixed-Satellite Service and Related Revisions of Part 25 of the Rules and Regulations, *Report and Order*, CC Docket No. 81-704, FCC 83-184, 54 Rad. Reg. 2d 577 (Aug. 16, 1983), *summary printed in* Licensing Space Stations in the Domestic Fixed-Satellite Service, 48 F.R. 40233 (Sept. 6, 1983).

<sup>21</sup> Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service, *Order and Authorization*, 11 FCC Rcd 13788, 13790, ¶ 6 (1996).

<sup>22</sup> Amendment of the Commission's Space Station Licensing Rules and Policies, *First Report and Order and Further Notice of Proposed Rulemaking*, IB Docket No. 02-34, 18 FCC Rcd 10760, 10872, ¶ 300 (2003) ("*Space Station Licensing Reform Order*"); International Bureau Satellite Division Information: Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis, *Public Notice*, Report No. SPB-207, 19 FCC Rcd 10652 (Int'l Bur., Sat. Div., 2004); Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis, *Public Notice*, No. SPB-195, 18 FCC Rcd 25099 (2003).

<sup>23</sup> 47 C.F.R. § 25.114(c)(4)(iii).

<sup>24</sup> LOI at 13.

<sup>25</sup> *Id.* at 13-14.

secondary designation for GSO FSS systems.<sup>26</sup> Hughes provides a technical analysis to demonstrate that its proposed operations in the 28.6-29.1 GHz band will not cause harmful interference to present or future users with superior status.<sup>27</sup> Our review of this analysis supports this conclusion. As a secondary use in the 28.6-29.1 GHz frequency band, operations using SPACEWAY 6 must accept interference from any Federal or non-Federal station authorized to operate in this band on a primary basis, and such operations shall terminate upon notification that they are causing harmful interference to any such system. In addition, operations must comply with any interference criteria that may be adopted by the Commission for GSO FSS systems operating in this band.

iii. *Non-Conforming Operations.*

12. Hughes also proposes operations using its GSO FSS space station in the 18.8-19.3 GHz band (space-to-Earth) on a non-harmful interference basis relative to other services with superior status in the band. The Commission's rules designate the 18.8-19.3 GHz band for primary use by NGSO FSS systems.<sup>28</sup> There is no designation in the 18.8-19.3 GHz band for GSO FSS systems. Further, the 18.8-19.3 GHz band contains a primary allocation for Federal GSO FSS operations and Federal NGSO FSS operations.<sup>29</sup> Non-Federal systems operating in the 18.8-19.3 GHz band must be coordinated with Federal systems operating in this band in accordance with footnote US 334 to Section 2.106 (Table of Frequency Allocations).<sup>30</sup> Hughes requests a waiver of the Commission's rules to permit use of the 18.8-19.3 GHz spectrum for non-conforming space-to-Earth operations on a non-harmful interference basis.<sup>31</sup>

13. The use of the radiocommunication frequencies in the United States must be in accordance with the Table of Allocations contained in Section 2.106 of the Commission's rules.<sup>32</sup> The Commission will grant a waiver of the Table of Allocations for non-conforming uses "when there is little potential interference into any service authorized under the Table of Allocations and when the non-conforming operator accepts any interference from authorized services."<sup>33</sup> Hughes provides a technical analysis to demonstrate that proposed operations in the 18.8-19.3 GHz band will not cause harmful interference to present or future users with superior authorization status.<sup>34</sup> Our review of this analysis supports this conclusion. Accordingly, we grant Hughes' request for a waiver of Section 2.106<sup>35</sup> of the Commission's rules to permit operations using SPACEWAY 6 on an unprotected, non-harmful interference basis in the 18.8-19.3 GHz (space-to-Earth) frequency band.

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<sup>26</sup> See Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for the Local Multipoint Distribution Service and for Fixed-Satellite Services, *Third Report and Order*, CC Docket No. 92-297, 12 FCC Rcd 22310 (1997).

<sup>27</sup> LOI, Attachment A at 4.

<sup>28</sup> 47 C.F.R. § 2.106, NG165.

<sup>29</sup> 47 C.F.R. § 2.106.

<sup>30</sup> 47 C.F.R. § 2.106, US 334.

<sup>31</sup> LOI at 14-15.

<sup>32</sup> 47 C.F.R. § 2.102.

<sup>33</sup> Fugro-Chance, Inc., *Order and Authorization*, 10 FCC Rcd 2860 (Int'l Bur. 1995) (authorizing operations of receive-only mobile earth terminals in the 11.7-12.2 GHz band on a non-interference basis).

<sup>34</sup> LOI, Attachment A at 4.

<sup>35</sup> 47 C.F.R. § 2.106.

14. As a non-conforming user in the 18.8-19.3 GHz band, operations using SPACEWAY 6 must accept any interference from any current or future non-Federal NGSO FSS system, any current or future Federal GSO FSS or NGSO FSS system, or any grandfathered co-primary fixed service stations authorized to use the 18.8-19.3 GHz frequency band. In addition, SPACEWAY 6 operations shall not cause harmful interference to any current or future non-Federal NGSO FSS system, and any Federal GSO FSS or NGSO FSS system, or any grandfathered co-primary fixed service stations authorized to use the 18.8-19.3 GHz frequency band. Operations of SPACEWAY 6 in the 18.8-19.3 GHz frequency band shall cease immediately upon notification of such harmful interference and Hughes shall inform the Commission in writing immediately of such an event. Hughes must also coordinate with Federal GSO and NGSO FSS systems authorized to use the 18.8-19.3 GHz band in accordance with footnote US 334 to the Table of Frequency Allocations. Finally, so as not to constrain the development of currently authorized and any future NGSO systems in the 18.8-19.3 GHz band, operations using SPACEWAY 6 must be in accordance with the technical and operational parameters specified in Hughes' application.

#### 4. Spectrum Availability

15. In the *DISCO II Order*, the Commission determined that, given the scarcity of geostationary-satellite orbit locations and spectrum resources, it would consider spectrum availability as a factor in determining whether to allow a non-U.S.-licensed space station to serve the market in the United States.<sup>36</sup> This is consistent with the Chairman's Note to the Basic Telecom Agreement, which states that WTO Members may exercise their domestic spectrum/frequency management policies when considering foreign entry.<sup>37</sup> Thus, in the *DISCO II Order*, the Commission stated that when grant of access would create interference with U.S.-licensed systems, it might impose technical constraints on the non-U.S.-licensed system's operations in the United States or, when conditions cannot remedy the interference, deny access.

16. Section 25.137(c) of the Commission's rules provides that non-U.S.-licensed GSO-like space stations seeking to serve the United States can file market access requests that will be processed under our first-come first-served queue pursuant to Section 25.158 of the Commission's rules.<sup>38</sup> Under this framework, an application that has been placed on public notice as accepted for filing will be granted if the applicant is legally and technically qualified,<sup>39</sup> and if the proposed space station will not cause harmful interference to a previously licensed space station, or to a space station proposed in a previously filed application.<sup>40</sup>

17. While SPACEWAY 6's technical parameters allow it to operate compatibly in a two-degree spacing environment, there are two in-orbit Ka-band space stations that are operating less than two degrees away from SPACEWAY 6's proposed 90.9° W.L. orbital location. Intelsat License LLC's (Intelsat's) Galaxy 28 satellite is operating at the 89.0° W.L. orbital location (*i.e.*, 1.9 degrees from Hughes' proposed orbital location).<sup>41</sup> New DBSD Satellite Services Group's (New DBSD's) DBSD-G1

<sup>36</sup> *DISCO II*, 12 FCC Rcd at 24159, ¶ 150.

<sup>37</sup> Chairman of the World Trade Organization Group on Basic Telecommunications, Chairman's Note, Market Access Limitations on Spectrum Availability, 36 I.L.M. at 372.

<sup>38</sup> 47 C.F.R. § 25.137(c) (“[A] non-U.S.-licensed GSO-like satellite system seeking to serve the United States can have its request placed in a queue pursuant to § 25.158 and considered before later filed applications of other U.S. satellite system operators . . .”).

<sup>39</sup> See 47 C.F.R. § 25.156(a).

<sup>40</sup> 47 C.F.R. § 25.158. EchoStar Satellite, LLC, *Order*, DA 05-1955 (rel. July 6, 2005) (denying an application that would conflict with a previously licensed space station).

<sup>41</sup> Intelsat is authorized to operate Galaxy 28 (Call Sign S2160) in the 29.5-30.0 GHz and 19.7-20.2 GHz bands. (continued...)

satellite is operating at the 92.85° W.L. orbital location (*i.e.*, 1.95 degrees from Hughes' proposed orbital location).<sup>42</sup> Before we will grant Hughes' request concerning SPACEWAY 6 service in the United States from the 90.9° W.L. orbital location, we must ensure that it would not cause harmful interference to either of these two adjacent space stations.

18. Hughes analyzed the interference potential of operations using SPACEWAY 6 to operations of other satellites as close as 1.8 degrees, and concluded that its operations should not cause greater interference than that permitted by Commission rules.<sup>43</sup> Significantly, neither Intelsat nor New DBSD objected to Hughes' market access request.

19. With respect to Earth-to-space transmissions, Hughes stated that if all transmitting earth station antennas communicating with SPACEWAY 6 conform to the performance standards of Section 25.209 of the Commission's rules, the additional interference caused to adjacent space stations by the reduced orbital separation will be a maximum of 1.14 dB. Hughes states this is 1.4 dB less than the maximum permitted under Section 25.138 (a)(6) of the Commission's rules.<sup>44</sup> We agree with this conclusion.

20. With respect to space-to-Earth transmissions, Hughes indicates that the maximum power flux-density (PFD) produced by SPACEWAY 6 as measured at the Earth's surface with a receive earth station at elevation angle of 90 degrees<sup>45</sup> is -119 dBW/m<sup>2</sup>/MHz.<sup>46</sup> In this frequency band, the maximum PFD level permitted by the Commission's rules is -118 dBW/m<sup>2</sup>/MHz.<sup>47</sup> Because the maximum power level of Hughes' proposed operations is less than that permitted by the Commission's rules, we find that operating at slightly less than 2 degree spacing should not increase the likelihood of harmful interference to adjacent operators.<sup>48</sup> Consequently, we conclude that granting market access for Hughes' proposed

Continued from previous page

Intelsat License LLC, *Grant of Authority*, IBFS File Nos. SAT-MOD-20050203-00019; SAT-MOD-20050422-00089 (June 17, 2005). Intelsat has applied to launch and operate another Ka-band space station (Call Sign S2787) at the 89.1° W.L. orbital location using the 29.5-30.0 GHz and 19.7-20.2 GHz frequencies. Intelsat License LLC, Application for Authority to Launch and Operate a Ka-Band Satellite at 89.1° W.L., IBFS File Nos. SAT-LOA-20090227-00029; SAT-AMD-20100302-00035 (filed Feb. 27, 2009 and amended Mar. 2, 2010). This request is pending. On February 17, 2010, ViaSat, Inc. applied to launch and operate the VIASAT-89W space station (Call Sign S2809) at the 88.9° W.L. orbital location using the 28.1-29.1 GHz, 29.5-30.0 GHz (Earth-to-space) and 18.3-18.8 GHz, 18.8-19.3 GHz, 19.7-20.2 GHz (space-to-Earth) frequency bands. ViaSat, Inc., Application for Authority to Launch and Operate a Ka-Band Satellite at 88.9° W.L. IBFS File No. SAT-LOA-20100217-00029; SAT-AMD-20100602-00012; SAT-AMD-20100831-00156 (filed Feb. 17, 2010, and amended on June 2, 2010 and Aug. 31, 2010). This request is pending.

<sup>42</sup> New DBSD has earth station authorizations to operate in the United States using its 2 GHz Mobile Satellite Services space station, DBSD-G1 (Call Sign S2651). This satellite provides service in the 18.55-18.8 and 19.7-20.2 (space-to-Earth) and 29.25-30.0 GHz (Earth-to-space) bands. New DBSD Satellite Services Group, *Spectrum Reservation Grant*, IBFS File Nos. SAT-MOD-20070919-00129; SAT-AMD-20071129-00161 (Apr. 2, 2008). New DBSD Satellite Services Group has not filed comments on the application.

<sup>43</sup> LOI, Attachment A at 7-8.

<sup>44</sup> Several rule sections specify power flux-density (PFD) limits for transmitting Ka-band space stations. *See* 47 C.F.R. §§ 2.106, note US255; 25.138(a)(6); 25.208(c) and (d).

<sup>45</sup> A 90 degree elevation would require an earth station to be located on the equator on the same longitude line as the space station (*i.e.*, at 90.9° W.L.). Earth stations operating in the United States will operate with lower elevation angles. This increases the distance between an earth station and the space station, and consequently, will lower the maximum PFD levels from the worst-case scenario in Hughes' analysis.

<sup>46</sup> LOI, Attachment A at 4.

<sup>47</sup> 47 C.F.R. § 25.138(a)(6).

SPACEWAY 6 space station from the 90.9° W.L. orbital location would not result in harmful interference to a previously authorized space station, or to a space station proposed in a previously filed space station application.

## 5. Bond

21. In the *DISCO II* Order, the Commission stated that it would apply its financial rules to non-U.S. satellites seeking to serve the U.S. market.<sup>49</sup> In the *Space Station Licensing Reform Order*, the Commission eliminated the financial requirements then in place and replaced them with a bond requirement.<sup>50</sup> The bond requirement is intended to ensure that applicants are financially able and committed to implementing their systems in a timely manner. Under this requirement, any entity whose “queued” application is granted must execute a bond, payable to the U.S. Treasury, within 30 days of the grant. The bond is payable upon failure to meet any implementation milestone where good cause for extending that milestone is not provided.<sup>51</sup> The amount of the bond may be reduced upon meeting each milestone.<sup>52</sup> This requirement also applies to entities awarded market access for a non-U.S.-licensed satellite that is not in-orbit.<sup>53</sup> Consequently, Hughes must post a \$3 million bond payable to the U.S. Treasury within 30 days of the date of this order. If Hughes does not do so, this grant will automatically become null and void.

## 6. Other Requirements

22. Nothing in the record indicates that Hughes is not legally qualified to provide service to the United States using its SPACEWAY 6 space station. Furthermore, nothing in the record raises any national security, law enforcement, foreign policy, or trade concerns.<sup>54</sup> Consequently, we conclude that granting SPACEWAY 6 access to the U.S. market is consistent with all DISCO II requirements.<sup>55</sup>

### B. Sponsoring Administration

23. SPACEWAY 6 proposes to operate at the 90.9° W.L. orbital location. The United Kingdom has filed coordination information with the International Telecommunication Union (ITU) for the Ka-band at 90.9° W.L. orbital location. Hughes states that its indirect wholly-owned subsidiary, Hughes Network Systems, Limited (HNS, Ltd.), is authorized by the United Kingdom to operate under this ITU filing.<sup>56</sup> This statement is supported by a letter from the United Kingdom’s Office of

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<sup>48</sup> Footnote US255 requires that the PFD across the 200 megahertz of the 18.6-18.8 GHz band not exceed -95 dBW/m<sup>2</sup>. Hughes proposes to operate with a maximum PFD of -119 dBW/m<sup>2</sup>/MHz in this band. This level corresponds to a maximum PFD of -95.99 dBW/m<sup>2</sup>/200 MHz. Consequently, the PFD limit in US 255 is met.

<sup>49</sup> *DISCO II*, 12 FCC Rcd at 24162, ¶ 157.

<sup>50</sup> *Space Station Licensing Reform Order*, 18 FCC Rcd at 10826-27, ¶¶ 170-72, and 47 C.F.R. § 25.165.

<sup>51</sup> *Id.* at 10826, ¶ 170.

<sup>52</sup> *Id.* at 10826-27, ¶ 172.

<sup>53</sup> *Id.* at 10875, ¶ 309. *See also* 47 C.F.R. § 25.137(d)(4).

<sup>54</sup> *DISCO II*, 12 FCC Rcd at 24170-72, ¶¶ 178-182.

<sup>55</sup> We remind earth station operators that Ka-band earth stations in the United States may not access SPACEWAY 6 unless SPACEWAY 6 is listed as a point of communication in the earth station license. In this regard, earth station operators may file applications to modify existing Ka-band earth station licenses to add SPACEWAY 6 as a point of communication or may file applications for new earth stations that list SPACEWAY 6 as a proposed point of communication.

<sup>56</sup> LOI at 3, 7.



Communications (Ofcom).<sup>57</sup> The record does not reflect whether Hughes has sought or will seek a separate approval required for U.K. space operations under the United Kingdom Outer Space Act. Accordingly, U.S. market access for SPACEWAY 6 will become effective only upon submission for the public record in this proceeding of a copy of its U.K. space operations authorization. We also note that, as is the case with all Ka-band space stations, Hughes must complete coordination with Federal systems operating in the 17.8-20.2 GHz band pursuant to Footnote US 334 to the U.S. Table of Frequency Allocations prior to providing service in the United States using SPACEWAY 6.<sup>58</sup>

### C. International Coordination

24. In its comments, Ciel asks the Commission to inject elements of the ITU coordination process into any grant of market access for SPACEWAY 6 at 90.9° W.L. Specifically, Ciel asks us to impose the following four conditions in any grant: (1) communications between U.S. earth stations and SPACEWAY 6 shall be in compliance with the satellite network coordination agreements reached between the United Kingdom and other Administrations; (2) in the absence of a coordination agreement with a satellite network with higher ITU priority, SPACEWAY 6 must cease service to the U.S. market immediately upon launch and operation of the higher ITU priority satellite, or be subject to further conditions designed to address potential harmful interference to a satellite with ITU date precedence; (3) in the absence of a coordination agreement with a satellite network with higher ITU priority, earth station licensees communicating with SPACEWAY 6 must terminate immediately any operations that cause harmful interference; and (4) Hughes must inform its customers that its rights to serve the U.S. market are subject to these limitations.<sup>59</sup>

25. The ITU is a specialized agency of the United Nations that, among other things, facilitates coordination of the use of specific frequency bands at specific orbital locations.<sup>60</sup> In broad terms, if an Administration files advance publication information (API) with the ITU at a particular orbital location for particular frequencies and particular service areas, successfully completes coordination of its filing, and obtains a favorable recordation of the frequency assignment in the ITU's Master International Frequency Register (MIFR), the Administration's space station is entitled to recognition and must be taken into account by other Administrations. Frequency assignments must also be brought into use within the time period specified in the ITU Radio Regulations or the filing may be suppressed by the ITU.<sup>61</sup> Favorable entry into the MIFR, however, does not suggest that other Administrations within the coordination arc will not be able to achieve subsequent favorable entry into the MIFR.<sup>62</sup>

26. Neither Hughes nor Ciel has indicated that its Administration has successfully completed

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<sup>57</sup> LOI at Attachment B (containing Letter from Stephen Limb, Manager, International Frequency Coordination, Ofcom, to Kathryn Medley, International Bureau, FCC (Sept. 1, 2008)).

<sup>58</sup> 47 C.F.R. § 2.106, footnote US 334.

<sup>59</sup> Ciel Comments at 2 (stating that the ITU filings relied upon by Ciel "have ITU date priority over the United Kingdom filings relied upon by Hughes..."); Reply of Ciel Satellite Limited Partnership, IBFS File Nos. SAT-LOI-20091110-00120 and -00121, filed March 10, 2010; Letter from Scott Gibson, Vice President and General Counsel, Ciel Satellite Group, to Robert Nelson, Chief, Satellite Division, International Bureau, FCC, IBFS File Nos. SAT-LOI-20091110-00120 and -00121, Apr. 16, 2010.

<sup>60</sup> Coordination procedures for Ka-band networks are contained in Article 9 of the ITU Radio Regulations.

<sup>61</sup> ITU Radio Regulations, 2008 Edition, Article 9. The procedures for notification of bringing into use a new Ka-band network are contained in Article 11.

<sup>62</sup> ITU Radio Regulations, No. 9.53 ("... the requesting and responding administrations shall make every possible mutual effort to overcome the difficulties, in a manner acceptable to the parties concerned").

coordination of its system.<sup>63</sup> Under the circumstances, we decline to specify detailed conditions concerning possible scenarios that may arise if the two companies and their respective Administrations do not complete coordination. Although we have in some instances provided more detailed conditions,<sup>64</sup> we see no reason to do so in this case. We expect the operators to work in good faith to resolve any issues preventing completion of coordination,<sup>65</sup> and for Hughes to seek modification of its market access grant should the need for modification arise from coordination.<sup>66</sup>

#### IV. ORDERING CLAUSES

27. Accordingly, IT IS ORDERED that, pursuant to Sections 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 303(r), and Sections 0.261 and 25.137(c) of the Federal Communication Commission's rules, 47 C.F.R. §§ 0.261, 25.137(c), the request of Hughes Network Systems, LLC, File No. SAT-LOI-20091110-00121, IS GRANTED and the SPACEWAY 6 space station (Call Sign S2755), IS DECLARED ELIGIBLE for use with appropriately licensed U.S. earth stations to provide FSS in the 28.35-29.1 GHz and 29.25-30.0 GHz frequency bands (Earth-to-space) and the 18.3-19.3 GHz and 19.7-20.2 GHz frequency bands (space-to-Earth), from the 90.9° W.L. orbital location. This grant is subject to the technical specifications set forth in Hughes' Letter of Intent, the Commission's rules not waived herein, and the following conditions:

- a. SPACEWAY 6 may not provide Direct-to-Home (DTH) service, Direct Broadcast Satellite (DBS) or Digital Audio Radio Service (DARS) to, from, or within the United States.
- b. SPACEWAY 6 shall be maintained within an east-west longitudinal station-keeping tolerance of  $\pm 0.05$  degrees of the 90.9° W.L. orbital location.
- c. Operations using the SPACEWAY 6 space station shall comply with coordination agreements reached between the United Kingdom and other Administrations.

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<sup>63</sup> There is no evidence that either filing has been entered into the MIFR with a favorable finding. Further, neither operator has launched a Ka-band space station near the 91° W.L. orbital location nor is there evidence that launch is imminent. In its filings before the Commission, Hughes relies upon an API that was filed by the United Kingdom with the ITU on June 1, 2007 with a bringing into use date of June 1, 2014. ITU reference number API/A/4642 received on June 1, 2007 and API/A/4642 Mod 1 received on December 5, 2007. The coordination request for this network, CR/C/2120, was filed with the ITU on December 5, 2007. At the time Ciel filed its comments, Ciel relied upon an API that was filed by the Canadian Administration on December 3, 2004 for the 91° W.L. orbital location. Based on the ITU Radio Regulations, the bringing into use date for the Canadian filing would appear to be December 3, 2011. See ITU reference number API/A/3368 received on December 3, 2004 and API/A/3368 Mod 1 received on December 3, 2006. The coordination request for this network, CR/C/1608, was received on June 17, 2007. Canada filed another API for the 91° W.L. orbital location on December 5, 2007. The associated coordination request was received by the ITU on June 5, 2008. Based on the ITU Radio Regulations, the bringing into use date for the 2007 filing would appear to be December 5, 2014.

<sup>64</sup> See *Star One S.A., Order on Reconsideration*, 08-1645 (Int'l. Bur., Sat. Div., 2008), *recon. pending*.

<sup>65</sup> In accepting our grant of market access, Hughes, like any U.S.-licensed operator, bears the risks inherent in the international coordination process. See, e.g., *Loral SpaceCom Corp., Application for Extension of Milestone Dates, Memorandum, Opinion and Order*, 20 FCC Rcd 12045, 12050, ¶ 13 (Int'l Bur. 2005) (“[p]roblems with coordination cannot be used as a basis for an extension of milestone requirements because the duty to coordinate with potentially affected satellite operators, and the risks inherent in this process, are assumed by the licensee upon acceptance of the authorization”).

<sup>66</sup> See, e.g., *Space Station Licensing Reform Order*, 18 FCC Rcd at 10870-71, ¶ 296.

- d. Power flux-density (PFD) at the Earth's surface produced by the emissions from SPACEWAY 6 space station for all atmospheric conditions, and for all methods of modulation, in the 18.3-19.3 GHz and 19.7-20.2 GHz frequency bands (space-to-Earth), shall not exceed a level of -119 dBW/m<sup>2</sup>/MHz at any angle of arrival.
- e. Pursuant to 47 C.F.R. § 25.145, operations using the SPACEWAY 6 space station in the 18.3-18.8 GHz band (space-to-Earth) are not entitled to protection from co-primary terrestrial services until the period during which terrestrial Fixed Service stations remain co-primary has expired.
- f. Operations using the SPACEWAY 6 space station shall not cause harmful interference to any Federal or non-Federal station authorized to operate on a primary basis in the 28.6-29.1 GHz frequency band, must accept any interference from these systems, and must terminate operations immediately upon notification of harmful interference.

28. IT IS FURTHER ORDERED that Hughes IS GRANTED a waiver of Footnote NG165 to Section 2.106 of the United States Table of Frequency Allocations, 47 C.F.R. 2.106, to permit operations in the 18.8-19.3 GHz (space-to-Earth) frequency band, provided that such operations must accept any interference from any current or future non-Federal NGSO FSS system, any current or future Federal GSO FSS or NGSO FSS system, or any grandfathered co-primary fixed service stations authorized to use the 18.8-19.3 GHz frequency band, and further provided that such operations shall not cause harmful interference to any current or future authorized non-Federal NGSO FSS system, any authorized Federal GSO FSS or NGSO FSS system, or any grandfathered co-primary fixed service stations. Operations shall immediately cease in the 18.8-19.3 GHz band, upon notification of such harmful interference.

29. IT IS FURTHER ORDERED that Hughes must coordinate its space-to-Earth operations in the 18.3-19.3 GHz and 19.7-20.2 GHz frequency bands with U.S. Federal systems, including Federal operations to earth stations in foreign countries, in accordance with footnote US 334 to the United States Table of Frequency Allocations, 47 C.F.R. § 2.106.

30. IT IS FURTHER ORDERED that this grant shall become effective upon Hughes filing a copy of an authorization under the United Kingdom Outer Space Act for the space operations of SPACEWAY 6 in the public record in this proceeding.

31. IT IS FURTHER ORDERED that Hughes' request for a partial waiver of Section 25.114(c)(4)(iii) of the Commission's rules IS GRANTED.

32. IT IS FURTHER ORDERED that this ruling shall be null and void with no further action on the Commission's part if the space station is not constructed, launched, and placed into operation in accordance with the technical parameters, terms and conditions of this authorization by these specified time periods following the date of authorization:

- a. Hughes must file a bond with the Commission in the amount of \$3 million, pursuant to the procedures set forth in 47 C.F.R. § 25.165, within 30 days of the date of this grant (July 18, 2010);
- b. Enter into a binding contract for construction within one year (June 17, 2012);
- c. Complete the Critical Design review within two years (June 17, 2013);
- d. Commence construction within three years (June 17, 2014); and
- e. Launch and begin operations within five years (June 17, 2016).

33. Hughes is afforded 30 days from the date of this action to decline this grant, as conditioned. Failure to respond within this period will constitute formal acceptance of the grant, as

conditioned.

34. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. §§ 1.106, 1.115, may be filed within 30 days of the release of this order.

FEDERAL COMMUNICATIONS COMMISSION

Mindel De La Torre  
Chief  
International Bureau