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August 6, 2014

**BY HAND DELIVERY AND EMAIL**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

**Re: IBFS File Nos. SAT-MOD-20130227-00026, SAT-AMD-20130429-00063,  
SAT-AMD-20130613-00083, SAT-MOD-20140623-00074, SAT-STA-  
20130510-00067, SAT-STA-20130716-00093, SAT-STA-20130912-00115,  
SAT-STA-20131113-00131, SAT-STA-20140113-00004, SAT-STA-20140314-  
00031, SAT-STA-20140513-00050, SAT-STA-20140711-00085  
Call Sign S2232**

Dear Ms. Dortch:

Spectrum Five, LLC (“Spectrum Five”) submits this letter summarizing a meeting on August 4 regarding the above-referenced modification and special temporary authorization (“STA”) renewal applications to operate the EchoStar 6 at 96.2° W.L. and to extend the satellite license term. Present at the meeting were José Albuquerque, Chief, Satellite Division, International Bureau; Karl Kensinger, Associate Division Chief, Satellite Division, International Bureau; Jennifer Gilsenan, Assistant Bureau Chief, Office of the Bureau Chief, International Bureau; David Wilson, CEO Spectrum Five; Thomas Sharon, COO Spectrum Five; Scott Angstreich and Dan Dorris, Kellogg, Huber, Hansen, Todd, Evans & Figel, P.L.L.C., counsel for Spectrum Five.

At the meeting, Spectrum Five urged the International Bureau to deny the pending modifications and STA renewal applications. *First*, Spectrum Five explained that EchoStar Satellite Operating Corporation (“EchoStar”) is warehousing valuable spectrum at 96.2° W.L. Despite being located at approximately 96.2° W.L. for more than sixteen months, EchoStar 6 has provided no service at all. The EchoStar 6 satellite is actually incapable of providing direct-to-home service because it is — and, to conserve fuel, must remain<sup>1</sup> — in a highly inclined orbit,

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<sup>1</sup> EchoStar 6 will reach approximately 6° inclination by its end of life in 2019.

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making it impossible for consumer dishes to track the satellite. EchoStar has admitted that it did not even turn on any transponder until November 2013 — six months after the STA was granted — and further, that it currently has activated only one transponder (of 32), apparently so that it can represent the satellite is in operation rather than as a prelude to offering any service. The public interest therefore would be better served by allowing Spectrum Five’s in-development satellite to use the 12/17 GHz Ku Band and 17/24 GHz Reverse Band frequency ranges at the 95.15° W.L. orbital location. By combining these frequency ranges, Spectrum Five would be able to provide greater bandwidth from this single orbital location than legacy carriers are capable of providing from multiple orbital slots.

*Second*, the Bureau is prohibited from authorizing EchoStar 6 for FSS and MSS operations rather than DBS operations, as the Bureau has contemplated in the public notice for the modification request.<sup>2</sup> According to the Commission’s Table of Frequency Allocations, FSS and MSS operations are allowed in the 12.2-12.7 GHz band for Region 2 only for “non-geostationary systems” (5.487A) and for “stations of the broadcasting-satellite service which are in conformity with the appropriate regional Plan,” provided the FSS and MSS operations “do not cause more interference, or require more protection from interference, than the broadcasting-satellite service transmissions operating in conformity with the Plan” (5.492).<sup>3</sup> EchoStar 6 fits neither exception. It is a geostationary satellite, and the Bureau has already found that the operations for EchoStar 6 that it authorized in the STA and is asked to authorize in the modification filing — with the boresight in the Atlantic Ocean in an attempt to avoid the DBS freeze — are “not . . . pursuant to a filing under the BSS Plan,” and therefore, will cause more interference than any authorized BSS operations.<sup>4</sup> Nor can the Bureau grant the modification request for DBS operations, even aside from the DBS freeze. “DBS operations must be in accordance with the” Region 2 BSS Plan,<sup>5</sup> and there is no Region 2 BSS filing that matches the operations proposed by EchoStar in its modification request.<sup>6</sup>

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<sup>2</sup> FCC, Public Notice, Report No. SAT-00946 (May 3, 2013) (accepting the modification filing “for purposes of considering whether authorization of fixed satellite and mobile satellite services, operating on an unprotected and non-harmful interference basis”).

<sup>3</sup> See 47 C.F.R. § 2.106; see also FCC Online Table of Frequency Allocations (July 25, 2014), available at <http://transition.fcc.gov/oet/spectrum/table/fccstable.pdf>.

<sup>4</sup> See Order and Authorization, *EchoStar Satellite Operating Company; Application for Special Temporary Authority Related to Moving the EchoStar 6 Satellite from the 77° W.L. Orbital Location to the 96.2° W.L. Orbital Location, and to Operate at the 96.2° W.L. Orbital Location*, 28 FCC Rcd 4229, ¶ 16 (Int’l Bur. 2013).

<sup>5</sup> 47 C.F.R. § 25.148(f).

<sup>6</sup> The Bureau is further prohibited from relying on Article 4.4 of the ITU Radio Regulations with respect to DBS operations. The ITU Radiocommunication Bureau has explained that applying Article 4.4 to a DBS satellite “is not in compliance with the” Region 2

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*Third*, Spectrum Five addressed the power levels of EchoStar 6’s transmissions. Spectrum Five provided new data showing that EchoStar 6 remains operating at excessive power levels as of July 25, 2014 — ten days after Spectrum Five had alerted the Commission of these power levels. *See Exhibit 2*. Spectrum Five also responded to EchoStar’s July 30, 2014 letter regarding the power levels. In that letter, EchoStar tellingly failed to provide data showing the power levels of EchoStar 6. “[T]hat failure gives rise to an inference that the evidence is unfavorable to” EchoStar because, if the data were favorable, EchoStar would have provided it. *International Union, UAW v. NLRB*, 459 F.2d 1329, 1336, 1338 (D.C. Cir. 1972). Spectrum Five urged the Bureau to insist that EchoStar submit its own data regarding the power levels at which it is operating EchoStar 6.

Spectrum Five also responded to EchoStar’s attempts to discredit the third-party contractor’s measurements (notwithstanding EchoStar’s own failure to submit its own data and the necessary inference from that failure that its own data would corroborate the third-party contractor’s measurements). Those arguments do not persuade: (i) the third-party contractor provided a detailed explanation of its measurement techniques and procedures; (ii) while the EIRP measurements were taken by an antenna with linear polarization, applying a +3dB correction factor to account for EchoStar 6’s circularly polarized transmissions is textbook and entirely proper; (iii) the NORAD TLE data to which EchoStar refers is simply irrelevant to — and does not affect — the “Measured EIRP” values on which Spectrum Five relies; (iv) the “Measured EIRP” is an observed value and does not depend on an “improper assumption” about saturation; rather the contractor “assumed the transponder is being operated at or near saturation” *as a result* of the measured power levels; and (v) the margin of error associated with these measurements — approximately ± 1 dBW — cannot explain the excess power levels on the order of 3-5 dBW.

Spectrum Five also addressed EchoStar’s unsupported claim that the excessive power levels were authorized by the coordination agreement with the United Kingdom. While Spectrum Five has never seen that agreement, EchoStar’s claim is contradicted by the United Kingdom’s recent submission to the ITU. In its July 28, 2014 ITU filing, the United Kingdom stated that its 2013 Part B modification to the BERMUDASAT-1 filing “implement[ed] the coordination agreement reached between [the U.K. Administration] and the U.S. Administration with respect to U.S. ITU filings at 101° W.L.”<sup>7</sup> That Part B modification reduced the power levels in its 2005 Part A filing, and indicates a peak EIRP at Miami, FL of 50.4 dBW, which

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BSS Plan. *See Letter from Yvon Henri, Chief, Space Services Department to Radiocommunications Agency Netherlands (Nov. 24, 2010)*, attached as Exhibit 5.

<sup>7</sup> Letter from Tony Azzarelli, Ofcom, to Space Services Department, Radiocommunication Bureau, ITU, Attachment 1 at 2-3 (July 28, 2014), attached as Exhibit 3.

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corresponds to a maximum EIRP at Woodbine, MD of approximately 46.2 dBW.<sup>8</sup> The third-party contractor's measurements show an EIRP at Woodbine, MD of approximately 50 dBW, far in excess (more than double) of what the United Kingdom has suggested the coordination agreement allows.<sup>9</sup>

In all events, if the Bureau were to rely on the coordination agreement to conclude that EchoStar has not violated the conditions of its STA, that agreement must be made part of the administrative record so that Spectrum Five and other interested parties can comment on EchoStar's claims. *See Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 243 (D.C. Cir. 2008) (Tatel, J., concurring) (stating the Commission must disclose redacted portions of the record to petitioners so that they would be able "to mount a substantial evidence challenge"); *Walter O. Boswell Mem'l Hosp. v. Heckler*, 749 F.2d 788, 792 (D.C. Cir. 1984) ("To review less than the full administrative record might allow a party to withhold evidence unfavorable to its case, and so the APA requires review of 'the whole record.'") (quoting 5 U.S.C. § 706); *see also Smith v. FTC*, 403 F. Supp. 1000, 1008 (D. Del. 1975) ("Allowing administrative agencies to preclude judicial access to materials relied upon by an agency in taking whatever action is then being subject to judicial scrutiny would make a mockery of judicial review.").

*Fourth*, Spectrum Five raised concerns regarding interference between Spectrum Five's licensed and earlier-filed reverse-band satellite at 95.15° W.L., which shares the 17 GHz band with EchoStar 6's uplink transmission. The Commission has previously recognized that such interference to the telemetry, tracking, and command ("TT&C") transmission of a DBS satellite "could result in a loss of satellite control," and it "rel[ies] upon the off-axis pfd coordination trigger" to protect against such interference.<sup>10</sup> In enacting those regulations, the Commission further recognized that "[s]mall variations in satellite orbital . . . inclination can produce significant variation in the geometry occurring between two adjacent spacecraft"; the Commission did not account for "satellites currently operating in highly-inclined orbits" such as

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<sup>8</sup> United Kingdom, Part B Notification Filing for BERMUDASAT-1, International Telecommunication Union (Apr. 11, 2013), attached as Exhibit 4.

<sup>9</sup> According to the operations specified in the STA, the EIRP at EchoStar 6's boresight in the Atlantic Ocean is 5.35 dBW more than the EIRP at Woodbine, MD. Thus, the measurements establish the EIRP at the boresight is more than 55 dBW, well in excess of the 49.8 dBW peak EIRP at which EchoStar 6 was supposed to operate.

<sup>10</sup> Second Report and Order, *The Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band*, 26 FCC Rcd 8927, ¶ 17 (2011).

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EchoStar 6.<sup>11</sup> Here, EchoStar has made no showing that EchoStar 6, given its highly inclined orbit, can operate without causing or receiving unacceptable interference in the shared band — interference that could cause EchoStar to lose control of EchoStar 6. More generally, the continued presence of EchoStar 6 at (or near) 96.2° W.L. materially hinders Spectrum Five’s ability to use its reverse-band license and launch its planned dual-band satellite, as well as to apply for any necessary future licenses for that satellite.

*Fifth*, Spectrum Five discussed the material in the attached document. *See Exhibit 1.*

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<sup>11</sup> *Id.* ¶¶ 24, 26 n.81; *see also id.* ¶¶ 39, 41 (“a bound must be placed on the . . . orbital inclination in order to ensure that the geometric assumptions underlying our antenna off-axis angular momentum measurements are valid”);

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Sincerely,

/s/ Scott H. Angstreich  
Scott H. Angstreich  
*Counsel to Spectrum Five LLC*

Enclosure

cc: Diane Cornell, Special Counsel to Chairman Wheeler  
Phuong Pham, Counsel for EchoStar

# **EXHIBIT 1**

## **EchoStar's Misstatements Regarding EchoStar 6**

### **1. Position**

- EchoStar repeatedly told the Commission that “EchoStar 6 was successfully repositioned to 96.2° W.L. on April 13.”<sup>1</sup> The conditions of the STA – and the BERMUDASAT-1 International Telecommunication Union (“ITU”) filing – required EchoStar to “station-keep” EchoStar 6, that is to maintain EchoStar 6 within 0.05° of 96.2° W.L.<sup>2</sup>
- NORAD measurements show that EchoStar 6 was not successfully repositioned as of April 13, 2013. For example, EchoStar 6 exceeded the 0.05° station-keeping box on April 15 and April 16.<sup>3</sup> On July 15, 2013, EchoStar claimed that the NORAD data was inaccurate and submitted its own satellite tracking data, but it did not dispute the fact that EchoStar 6 had exceeded the 0.05° station-keeping box after April 13. Indeed, EchoStar admitted that its own data showed that EchoStar 6 was station-kept for only “a preponderance of the time” between April 13 and April 25, and was fully station-kept beginning on April 25, two weeks after EchoStar told the Commission that “EchoStar 6 was successfully repositioned.”<sup>4</sup> The EchoStar data further showed that EchoStar 6 was more than 0.1° from 96.2° around April 15 and 16.<sup>5</sup>
- On January 3, 2014, EchoStar revealed that, in October 2013 (after the ITU raised questions about the location of EchoStar 6), it had determined that its July 2013 data submission to the Commission was erroneous. EchoStar waited at least two months before disclosing its error to the Commission and then provided only the vaguest description of the error.<sup>6</sup> But even according to EchoStar’s “reconstructed” data, EchoStar 6 was not maintained within the 0.05° station-keeping box until November 2013, more than six months after EchoStar told the commission that “EchoStar 6 was successfully repositioned.”<sup>7</sup> Recent NORAD measurements show that EchoStar 6 continued to violate the 0.05° station-keeping condition, including in February 2014.<sup>8</sup>

### **2. Power Levels**

- In its February 2013 applications to move EchoStar 6 to 96.2° W.L., EchoStar represented that EchoStar 6 would operate at a reduced peak downlink power of 49.8 dBW EIRP (out of its maximum 54.7 dBW EIRP) so that it would not affect adjacent, operational satellite networks.<sup>9</sup> Because EIRP is reported on a logarithmic scale, this commitment reduced the power of EchoStar 6 by approximately 300 percent. The International Bureau conditioned the STA on EchoStar’s compliance with this commitment.<sup>10</sup>
- Recent measurements taken by a third-party contractor over 24-hour periods on July 7, 2014 and July 25, 2014 show that EchoStar 6 was operating with an average downlink EIRP of 49.9 dBW and 51.0 dBW, respectively, at Woodbine

MD. These readings are consistent with an EIRP envelope of  $50.5 \pm 0.5$  dBW at Woodbine, MD, which corresponds to a peak downlink EIRP of  $55.85 \pm 0.5$  dBW at EchoStar 6's boresight. That peak downlink EIRP ( $55.85 \pm 0.5$  dBW) far exceeds the reduced peak downlink EIRP (49.8 dBW) at which EchoStar represented EchoStar 6 would operate.<sup>11</sup>

- EchoStar does not deny that EchoStar 6's peak downlink power has exceeded 49.8 dBW, nor has it provided to the Commission any peak downlink power data to contest Spectrum Five's data.<sup>12</sup> Instead, it claims that these excess power levels are permitted by a coordination agreement between EchoStar and DIRECTV. Spectrum Five cannot evaluate whether that statement is true because EchoStar has insisted on keeping the coordination agreement secret.
- At the very least however, EchoStar's claim conflicts with the United Kingdom's July 28, 2014 submission to the ITU. The United Kingdom stated that its 2013 Part B modification to the BERMUDASAT-1 filing "implement[ed] the coordination agreement reached between [the U.K. Administration] and the U.S. Administration with respect to U.S. ITU filings at  $101^\circ$  W.L."<sup>13</sup> That Part B modification indicates a peak EIRP at Miami, FL of 50.4 dBW, which corresponds to a maximum EIRP at Woodbine, MD of approximately 46.2 dBW.<sup>14</sup> However, measurements at Woodbine, MD show an EIRP of  $50.5 \pm 0.5$  dBW. This EIRP observed at Woodbine, MD ( $50.5 \pm 0.5$  dBW) far exceeds the EIRP allowed at Woodbine, MD by the Part B filing (46.2 dBW). Because the Part B filing supposedly implements the coordination agreement on which EchoStar relies, it appears that EchoStar 6 is exceeding the power levels allowed by that coordination agreement.
- In any case, EchoStar has provided no analysis regarding how these excess power levels may affect other nearby satellite networks, such as the satellites operated by Telesat Canada at the  $91^\circ$  W.L. cluster. EchoStar's claim that the Telesat Canada satellites would not be affected was premised on a peak EIRP of 49.8 dBW, which EchoStar does not dispute that it is exceeding. And EchoStar does not claim that it has any coordination agreement with Canada that would allow it to operate at these higher power levels.<sup>15</sup> Nor does EchoStar provide any analysis how these excess power levels may affect Spectrum Five's reverse-band satellite at  $95.15^\circ$  W.L.

### **3. Remaining Useful Life**

- In December 2011, EchoStar notified the Commission that it would partially suspend station-keeping for EchoStar 6 in the north-south direction, allowing the satellite to drift up to  $0.5^\circ$  beyond the equatorial plane — called an "inclined orbit."<sup>16</sup> According to EchoStar, this would save fuel and would extend EchoStar 6's expected end of life to February 2013, with an uncertainty of six months.<sup>17</sup>

- In its February 2013 application for authority to operate at 96.2° W.L., EchoStar continued to represent that the inclined orbit would be limited to 0.5°.<sup>18</sup> In fact, EchoStar had completely suspended north-south station-keeping for EchoStar 6 in the summer of 2012,<sup>19</sup> but EchoStar did not notify the Commission when it did so, as the Commission’s rules require, instead waiting until December 2013 to disclose that fact.<sup>20</sup> At the time EchoStar submitted its modification application, EchoStar 6’s orbital inclination already exceeded 1°, far more than the maximum 0.5° orbital inclination stated in the modification application.

#### **4. Providing Service**

- In its request to move EchoStar 6 to 96.2° W.L., EchoStar represented that it would “use EchoStar 6 at 96.2° W.L. to evaluate and develop commercial service opportunities in the Caribbean, Latin American, and North Atlantic markets,” including “the provision of video programming and other services, including international maritime services, to consumers in Bermuda and elsewhere.”<sup>21</sup> EchoStar further represented that EchoStar 6 was “in operation” at 96.2° W.L. as of April 13, 2013.<sup>22</sup> And EchoStar has continued to represent to the Commission that it has “commenced commercial development activities,” which might lead to certain opportunities, including “direct-to-home services.”<sup>23</sup>
- Despite being at 96.2° W.L. for over a year, EchoStar 6 has never provided — or even offered — service to any customer. In fact, only a single transponder (out of 32) has been activated, and then only for testing purposes. EchoStar has further admitted that it did not even activate that transponder until November 2013.<sup>24</sup>
- Because EchoStar completely suspended north-south station-keeping in the summer of 2012, EchoStar 6 is now operating at an inclined orbit of 2°, an amount that is continuing to grow. As a result, EchoStar 6 cannot be used to provide direct-to-home service to consumers, even though EchoStar has continued to represent direct-to-home service as one service EchoStar 6 will be able to provide from 96.2° W.L.<sup>25</sup>

#### **5. Lack of Authorization from the United Kingdom and Bermuda**

- In EchoStar’s original February 20, 2013 STA application, EchoStar stated that its “development partner, SES Satellites (Bermuda) Ltd. . . . has been authorized to operate a BSS satellite at 96.2° W.L. pursuant to the BERMUDASAT-1 filing.”<sup>26</sup> This fact was critical to EchoStar’s application because it stated that SES would operate the satellite.<sup>27</sup>
- SES was not authorized to operate a BSS satellite at 96.2° W.L. when that statement was made. SES received two of the three Bermuda certifications in March 2013, and it did not receive its final license from Bermuda until August 2013.<sup>28</sup> Moreover, EchoStar did not disclose that SES — a Bermuda company — needed a license from the United Kingdom pursuant to the Outer Space Act of

1986.<sup>29</sup> Bermuda is not an ITU administration and cannot issue licenses. And the U.K. Space Agency — which is responsible for licensing, not Ofcom — has never issued (or even received an application for) such a license.<sup>30</sup>

## 6. Operating Parameters

- Direct Broadcast Satellites (“DBS”) like EchoStar 6 must “operate[] in accordance with the sharing criteria and technical characteristics” of the ITU’s Region 2 Broadcasting Satellite Service (“BSS”) Plan.<sup>31</sup> In its application for authority to move EchoStar 6 to 96.2° W.L., EchoStar represented that EchoStar 6 would operate “pursuant to” the BERMUDASAT-1 ITU filing and therefore would be consistent with the Region 2 BSS Plan assuming that EchoStar successfully coordinated with other administrations.<sup>32</sup>
- The International Bureau has already concluded that EchoStar’s representation was “not correct.”<sup>33</sup> EchoStar is not pointing its beam toward the continental United States – as specified in the BERMUDASAT-1 filing – but rather has pointed its beam into the Atlantic Ocean.<sup>34</sup>

### **This Orbital Location Could Be Put To Better Use**

EchoStar is attempting to warehouse valuable spectrum at the 96.2° W.L. orbital slot. Despite placing EchoStar 6 at that orbital slot more than a year ago, EchoStar has never provided service to any customer. In fact, EchoStar has activated only 1 of the 32 transponders on EchoStar 6, and then, only for testing purposes. EchoStar 6 cannot possibly provide direct-to-home service to consumers because of its highly inclined orbit. Nor can EchoStar resume north-south station-keeping for EchoStar 6 to enable direct-to-home service — the satellite would within months run out of fuel. The public interest therefore would be far better served if this orbital slot were in use by another satellite provider that would provide service immediately.

Spectrum Five could make better use of this orbital slot. It already holds an FCC license to operate a “reverse-band” satellite at 95.15° W.L. using the 17/24 GHz frequency ranges and has an international filing to operate a DBS satellite at 95.15° W.L. using the 12/17 GHz frequency ranges. Spectrum Five has raised \$30 million and spent \$20 million on the construction of a dual-band satellite that can simultaneously utilize both the reverse band and the DBS spectrum. This satellite is on schedule to be launched and in operation with at least its reverse-band capacity by August 30, 2016.

However, if EchoStar is allowed to keep EchoStar 6 at the 96.2° W.L. orbital location, Spectrum Five’s satellite will be unable to provide DBS service from the 95.15° W.L. orbital location because DBS cannot feasibly operate with 1° separation. EchoStar 6 also threatens Spectrum Five’s ability to provide reverse band 17/24 GHz service from 95.15° W.L. EchoStar has submitted no interference analysis to show that, given EchoStar 6’s excess power levels and highly inclined orbit, EchoStar 6 will not interfere with Spectrum Five’s reverse-band satellite or other nearby satellite networks.

Accordingly, allowing EchoStar 6 to remain at 96.2° W.L. will harm consumers by tying up valuable spectrum that could be put to use for service by Spectrum Five. Entry by Spectrum Five, moreover, would add much needed competition to the satellite broadcast market that is currently controlled by only two providers — Dish Network (through its affiliate EchoStar) and DIRECTV.

EchoStar’s repeated misstatements provide another reason the Commission should reject its requests to modify permanently EchoStar 6’s license to allow it to operate at 96.2° W.L. “The duty of absolute truth and candor is a fundamental requirement for those appearing before the Commission,” because the Commission’s “decisions rely heavily on the completeness and accuracy of applicants’ submissions,” as the Commission “do[es] not have the resources to verify independently each and every representation made in the thousands of pages submitted to [it] each day.” Apparent Liability for Forfeiture, *In re SBC Commc’ns, Inc.*, 16 FCC Rcd 19091, ¶ 42 (2001); *see* 47 C.F.R. §§ 1.17, 1.65. EchoStar’s pattern of misrepresentations in the EchoStar 6 proceedings detailed above – and failure to correct those misrepresentations – call into question each of the grounds EchoStar has asserted for granting the application.

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<sup>1</sup> E.g., Opposition of EchoStar to Application for Review at 5, *EchoStar Satellite Operating Company; Application for Special Temporary Authority Related to Moving the EchoStar 6 Satellite from the 77° W.L. Orbital Location to the 96.2° Orbital Location, and to Operate at the 96.2° W.L. Orbital Location*, IBFS File No. SAT-STA-20130220-00023 (Apr. 22, 2013) (“EchoStar 4/22/13 Opp’n”).

<sup>2</sup> See Order and Authorization, *EchoStar Satellite Operating Company; Application for Special Temporary Authority Related to Moving the EchoStar 6 Satellite from the 77° W.L. Orbital Location to the 96.2° W.L. Orbital Location, and to Operate at the 96.2° W.L. Orbital Location*, 28 FCC Rcd 4229, ¶ 20(b) (Int’l Bur. 2013) (“Bureau Order”).

<sup>3</sup> Letter from Scott Angstreich, Kellogg, Huber, Hansen, Todd, Evans & Figel P.L.L.C., to Marlene H. Dortch, Secretary, FCC, IBFS File Nos. SAT-STA-20130510-00067 *et al.* (Aug. 13, 2013).

<sup>4</sup> Letter from Phuong N. Pham, Kellogg, Wilkinson, Barker, Knauer LLP, to Marlene H. Dortch, Secretary, FCC, IBFS File Nos. SAT-STA- 20130510-00067 *et al.* (July 15, 2013).

<sup>5</sup> *Id.*

<sup>6</sup> Letter from Jennifer A. Manner, EchoStar, to Marlene H. Dortch, Secretary, FCC, IBFS File Nos. SAT-STA- 20130510-00067 *et al.* (Jan. 3, 2014) (“EchoStar 1/3/14 Letter”) (claiming “an incorrect spacecraft calibration parameter had been inserted into a calibration file used for spacecraft ranging,” which caused a 0.035° to 0.040° westward bias).

<sup>7</sup> *Id.*

<sup>8</sup> Opposition of Spectrum Five LLC at 9-10, *In re EchoStar Satellite Operating Company*, IBFS File No. SAT-STA-20140513-00050 (June 9, 2014) (“Spectrum Five 6/9/14 Opp’n”).

<sup>9</sup> Application Narrative, Exhibit 2 at 1-2, Application for Special Temporary Authority, *EchoStar Satellite Operating Corporation; Request for Special Temporary Authority to Move EchoStar 6 to, and Operate It at, 96.2° W.L.*, IBFS File No. SAT-STA-20130220-00023 (Feb. 20, 2013) (emphasis added) (“Initial STA Application”); *see also id.* at 4-5 (repeating statements that EchoStar 6 would operate with “a peak downlink EIRP of 49.8 dBW”).

<sup>10</sup> Bureau Order ¶¶ 10, 20.

<sup>11</sup> See Supplemental Opposition of Spectrum Five, LLC, *In re EchoStar Satellite Operating Company*, IBFS File No. SAT-STA-20130510-00067 *et al.* (July 15, 2014) (“Spectrum Five 7/15/14 Opp’n”).

<sup>12</sup> See Letter from Jamie Londono, EchoStar, to Marlene H. Dortch, Secretary, FCC, at 2, IBFS File Nos. SAT-MOD-20130227-00026 *et al.* (July 30, 2014).

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<sup>13</sup> Letter from Tony Azzarelli, Ofcom, to Space Services Department, Radiocommunication Bureau, ITU, Attachment 1 at 2-3 (July 28, 2014).

<sup>14</sup> Letter from M.M. Hoogland, Radiocommunication Agency Netherlands, to François Rancy, Executive Secretary, Radio Regulations Board, ITU, at 4 (July 8, 2014).

<sup>15</sup> Initial STA Application, Exhibit 2 at 5.

<sup>16</sup> See Letter From Pantelis Michalopoulos, Steptoe & Johnson LLP, to Marlene H. Dortch, IBFS File No. SAT-STA-20111004-00194 (Dec. 2, 2011).

<sup>17</sup> *Id.*

<sup>18</sup> Schedule S at S3f, *EchoStar Satellite Operating Corporation; Request for Modification of Authorization to Move EchoStar 6 to, and Operate It at, 96.2° W.L.*, IBFS File No. SAT-MOD-20130227-00026 (Feb. 27, 2013).

<sup>19</sup> Motion to Strike Supplement to Petition to Deny of EchoStar, *EchoStar Satellite Operating Corporation; Request for Modification of Authorization to Operate EchoStar 6 at 96.2° W.L.*, IBFS File No. SAT-MOD-20130227-00026 *et al.* (Dec. 9, 2013).

<sup>20</sup> 47 C.F.R. § 25.280(a).

<sup>21</sup> Initial STA Application at 2.

<sup>22</sup> *E.g.*, EchoStar 4/22/13 Opp'n at 5.

<sup>23</sup> See, e.g., Narrative at 2-3, Application for Special Temporary Authority, *EchoStar 6 STA Renewal*, IBFS File No. SAT-STA-20140513-00050 (May 13, 2014) (“May 2014 STA Application”).

<sup>24</sup> Spectrum Five 6/9/14 Opp'n at 5-7.

<sup>25</sup> *Id.* at 6.

<sup>26</sup> Initial STA Application at 2.

<sup>27</sup> See *id.*

<sup>28</sup> See Letter from Jennifer A. Manner, EchoStar, to Marlene H. Dortch, Secretary, FCC, at 2, IBFS File Nos. SAT-STA-20140113-00004 *et al.* (Mar. 31, 2014).

<sup>29</sup> Outer Space Act, 1986, Eliz. c. 38, §§ 1, 3, available at <http://www.bis.gov.uk/assets/ukspaceagency/docs/osa/outer-space-act-1986.pdf>.

<sup>30</sup> Spectrum Five 6/9/14 Opp'n at 12-13.

<sup>31</sup> 47 C.F.R. § 25.148(f). “BSS” is the phrase used by the international community to refer to “DBS.”

<sup>32</sup> Initial STA Application at 2.

<sup>33</sup> See Bureau Order ¶ 18.

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<sup>34</sup> See Letter from William M. Wiltshire, Wiltshire & Grannis LLP, to Marlene H. Dortch, Secretary, FCC at 2-3, IBFS File Nos. SAT-STA-20130220-00023 (Feb. 25, 2013).

# **EXHIBIT 2**

## SUMMARY OF FINDINGS

To: Tom Sharon  
Spectrum Five

From: Mike Felix  
NOC Supervisor  
SAT Services NOC

Date: July 28th, 2014

Between July 25<sup>th</sup> and July 26<sup>th</sup> 2014, SAT Services provided spectrum measurements of the Echostar 6 satellite. These measurements were taken with a 7.3 meter antenna from Woodbine, MD. The following measurements were observed.

Day	Time (UTC)	Measured EIRP	Corrected EIRP	Theoretical EIRP	Nominal EIRP	Predicted Longitude (W)	Predicted Latitude (N)
25-Jul	0203	48.5	51.5	49.6	49.35	-96.18	0.56
25-Jul	0305	47.65	50.65	49.1	49.35	-96.19	0.01
25-Jul	0403	48.02	51.02	49.1	49.35	-96.21	-0.53
25-Jul	0502	47.9	50.9	46.7	49.35	-96.22	-1.05
25-Jul	0603	47.3	50.3	46.7	49.35	-96.23	-1.5
25-Jul	0704	48.2	51.2	46.7	49.35	-96.23	-1.83
25-Jul	0802	48.04	51.04	46.7	49.35	-96.23	-2.06
25-Jul	0903	48.2	51.2	46.7	49.35	-96.23	-2.15
25-Jul	1000	47.8	50.8	46.7	49.35	-96.23	-2.09
25-Jul	1100	48.1	51.1	46.7	49.35	-96.22	-1.89
25-Jul	1203	48.6	51.6	46.7	49.35	-96.22	-1.53
25-Jul	1303	48.5	51.5	46.7	49.35	-96.22	-1.13
25-Jul	1424	47.9	50.9	49.1	49.35	-96.23	-0.37
25-Jul	1505	48.75	51.75	49.1	49.35	-96.24	0
25-Jul	1600	48.8	51.8	49.6	49.35	-96.24	0.48
25-Jul	1700	48.5	51.5	49.6	49.35	-96.24	1
25-Jul	1800	48	51	49.6	49.35	-96.24	1.55
25-Jul	1900	47.6	50.6	49.1	49.35	-96.23	1.91
25-Jul	2000	47.85	50.85	49.1	49.35	-96.22	2.08
25-Jul	2100	47.9	50.9	49.1	49.35	-96.2	2.15
26-Jul	0001	47.75	50.75	49.6	49.35	-96.17	1.44
26-Jul	0100	47.5	50.5	49.6	49.35	-96.17	0.85
26-Jul	0200	47.8	50.8	49.1	49.35	-96.17	0.27

## DEFINITION OF MEASUREMENTS

Measured EIRP – This is the Effective Isotropic Radiated Power (or EIRP) reported by the measurement system. An earth station gain calibration kit is installed on the antenna used for these measurements to rule out cable and other system losses. The antenna used for measurement was manually peaked on the Echostar-6 satellite before measurements were taken.

Corrected EIRP – A +3dB correction factor is applied to all Measured EIRP values. This is due to the Echostar 6 satellite having a circular Ku downlink polarity while the antenna used for measurement has only a linear Ku polarization option.

Theoretical EIRP – This value estimates the effect of satellite inclination on the Woodbine, MD site's theoretical EIRP levels due to reported inclination effects if no attitude correction actions were being performed by the Echostar 6 satellite.

Nominal EIRP – If the Echostar 6 satellite was flown in such a manner as to introduce no inclination effects, the estimated monial EIRP for the site would be approximately 49.35dB at all times. This assumption is made based on the Woodbine, MD site falling approximately halfway between EIRP contours reported at 49.1dBW and 49.6dBW.

Predicted Longitude and Latitude – These values were derived from the published NORAD TLE model at the time measurements were taken.

### **ASSUMPTIONS AND OBSERVATIONS**

As limited data was available directly from Echostar regarding the configuration or flight operations of the Echostar-6 satellite, the following data sources were used:

EIRP contours and downlink beam coverage: <http://www.satbeams.com/footprints?beam=7757>

Ephemeris and satellite position: <http://www.n2yo.com/?s=26402>

Only a single transponder (Ku-17, center frequency 12457.28MHz) was active on the Echostar-6 satellite during the above measurement windows. A single carrier occupying all non-guard band bandwidth was observed operating in the transponder during all measurement windows. It is assumed the transponder is being operated at or near saturation.

Based on EIRP trending, observed EIRP levels at the Woodbine site should have dropped between the 0403 and 1424 UTC measurement windows. No such drop was observed. One of two conditions would have caused this observation. The most likely scenario is that the Echostar-6 payload is being reoriented throughout the day to maintain nominal earth pointing. The other possibility is that the available contour data does not match the actual satellite configuration.

Overall, corrected measured EIRP levels tracked near expected nominal levels throughout the measurement period. Less than 1dB of variation in EIRP levels was observed during the 24 hour monitoring period.

# **EXHIBIT 3**

28 July 2014

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**Subject:** **Bringing into use of the BERMUDASAT-1 satellite network under Appendices 30 and 30A**

**Refs:** (1) **Fax from the Administration of the Netherlands AT-EZ/6946348 of 8 July 2014 contained in Document RRB14-2/15**

**Atts:**

- (a) **ATTACHMENT 1 – Supplemental Response to Netherlands Fax**
- (b) **ATTACHMENT 2 – WRC-12 Document titled “Instructions to COM-5 Adhoc.doc”**
- (c) **ATTACHMENT 3 – Example deployment of EchoStar 6 over the United States**
- (d) **ATTACHMENT 4 – FCC application for EchoStar 6 as amended 13 June 2013**

Dear Sir:

The United Kingdom (“U.K.”) Administration hereby responds to the above-referenced fax from the Netherlands Administration requesting that the Radio Regulations Board cancel the entry of the U.K. Administration’s BERMUDASAT-1 filing at the nominal 96.2° W.L. orbital location in the Master Register (the “Netherlands Fax”). As discussed herein, because the BERMUDASAT-1 filing was properly brought into use consistent with all applicable ITU requirements, the filing’s entry in the Master Register and the Region 2 BSS Plans should be retained, and the request of the Netherlands should be denied.

In particular, contrary to the assertions in the Netherlands Fax:

1. The EchoStar 6 spacecraft indisputably fulfills the requirements of No. **11.44B**, which provides that to bring into use an assignment, a space station must have “the capability of transmitting or receiving” the frequencies specified in the assignment. The regulatory language is clearly referring to the technical capability of the spacecraft, and we have shown that EchoStar 6 has that capability. Accordingly, the

discussion in the Netherlands Fax of the legal authority for operations of EchoStar 6 is not relevant and should not be taken into consideration.

2. The United States (“U.S.”) Administration expressly stated that it does not object to our reliance on EchoStar 6 to bring into use the BERMUDASAT-1 frequency assignments. This confirmation meets the requirements of the satellite sovereignty rule adopted at WRC-12.
3. EchoStar 6 was relocated to the nominal 96.2° W.L. orbital location in advance of the regulatory deadline of 15 April 2013 for the BERMUDASAT-1 satellite network, and has been maintained there ever since.

The Netherlands Fax also makes a number of extraneous arguments that rely on mischaracterizations of the underlying facts or misinterpretation of regulatory requirements. We respond to these errors in detail in Attachment 1 to this letter.

Background: On 11 April 2013, this Administration provided notification that it had completed the Appendices **30** and **30A** modification process for the BERMUDASAT-1 network and specified the final technical characteristics of that network, pursuant to Sections 4.2.16 of those Appendices. At the same time, this Administration also provided Resolution **49 (Rev. WRC-12)** information describing the EchoStar 6 spacecraft, and asked that the BERMUDASAT-1 network be notified under Articles 5 of Appendices **30** and **30A** and hence entered into the Master Register. Subsequently, on 30 July 2013, we filed a notice pursuant to No. **11.44B** advising that EchoStar 6 had been deployed at the nominal 96.2° W.L. orbital location on 13 April 2013, prior to the regulatory deadline of 15 April 2013, and had been maintained there for a period of 90 days. On 3 September 2013, the Bureau entered the BERMUDASAT-1 frequency assignments in the Master Register.

The Netherlands Administration has raised a number of objections alleging that the BERMUDASAT-1 filing was not brought into use in conformity with the applicable regulations. The Bureau has twice explicitly rejected those claims, concluding that “the frequency assignments of the BERMUDASAT-1 satellite network were brought into use in accordance with No. **11.44B** within the regulatory timeframe of Appendices **30** and **30A**.<sup>1</sup>”<sup>1</sup> The most recent Netherlands Fax provides no justification for departure from these prior Bureau conclusions.

The Netherlands Administration relies on three arguments in support of its request for cancellation: that it is legal capability rather than technical capability to operate in certain bands that is required for bringing into use a satellite network filing; that the U.S. Administration did not provide its consent for using a U.S. satellite to bring the BERMUDASAT-1 filing into use; and that the BERMUDASAT-1 filing should be disallowed

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<sup>1</sup> See 19 February 2013 letter from Mr. Yvon Henri, Chief, Space Services Department, BR, to the Radiocommunications Agency Netherlands (provided on Pages 48-49 of Document RRB14-2/15) and the 12 March 2014 letter from Mr. Francois Rancy, Director, BR, to Mr. M.M. Hoogland MSc. MBA, Head, Networks Department, Radiocommunications Agency Netherlands (provided on Pages 27-28 of Document RRB14-2/15).

because of minor and temporary stationkeeping excursions.<sup>2</sup> As discussed below, none of these arguments is valid. Accordingly, we urge the Board to direct the Bureau to again confirm that the BERMUDASAT-1 filing was properly brought into use and is entitled to remain in the Master Register and the Region 2 BSS Plans.

**1. As defined in No. 11.44B, EchoStar 6 has the “capability” to transmit and receive BERMUDASAT-1 frequency assignments.**

No. 11.44B provides that:

A frequency assignment to a space station in the geostationary-satellite orbit shall be considered as having been brought into use when a space station in the geostationary satellite orbit with the *capability* of transmitting or receiving that frequency assignment has been deployed and maintained at the notified orbital position for a continuous period of ninety days. (Emphasis added.)

The Netherlands Administration’s attempts to misinterpret the term “capability” in this provision to refer to the legal authority pursuant to which the space station is operating are contradicted by the plain language of the rule and by explanatory documents regarding the rule’s intent. As the rule and these documents demonstrate, technical “capability” is the relevant factor under No. 11.44B. Because EchoStar 6 is clearly technically capable of operating the frequency assignments and with the network parameters described in the BERMUDASAT-1 filing, this argument must be dismissed.

**a. Legal capability is not a requirement of No. 11.44B.**

The Netherlands Fax focuses on the restrictions in the U.S. Administration’s authorization of the EchoStar 6 satellite and differences between that authorization and the characteristics of the BERMUDASAT-1 filing in support of its allegation that EchoStar 6 is not capable of transmitting and receiving the notified frequency assignments. Yet a review of No. 11.44B and its history makes it clear that only technical capability of the satellite is required to bring frequency assignments into use.

Any discussion of No. 11.44B must start with the terms of the provision itself, and the Netherlands suggestion that “capability” refers to legal authority is inconsistent with the ordinary meaning of that term. Capability means “power or ability,” not legal authority.<sup>3</sup>

Documents drafted contemporaneously with adoption of No. 11.44B at WRC-12 confirm that the intention of the WRC was to specify the technical capability of the spacecraft necessary to bring into use a satellite network filing, as the language of the rule indicates. The consensus regarding bringing into use, suspension of use and Resolution 49 was reached on

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<sup>2</sup> The Netherlands Fax, Pages 11-14.

<sup>3</sup> See, e.g., NEW OXFORD AM. DICTIONARY 252 (2d ed. 2005) (defining “capable” as one’s “power or ability,” and “capabilities” as “the extent of someone’s or something’s ability”).

10 February 2012, and summarized in a document titled “Instructions to COM5 Ad-Hoc.doc” which was provided to all WRC participants through the ITU’s Sharepoint website. This document defines bringing into use “as having a satellite deployed (i.e. stopped) at the notified orbital location,” and goes on to make clear that “the satellite must have the *technical capabilities* to support frequency assignments in all frequency bands that are being brought into use.”<sup>4</sup> The document also clarifies that operation of TT&C is sufficient for bringing into use.

This understanding of No. **11.44B** is also confirmed by documents issued by the Director of the Radiocommunication Bureau since WRC-12. Specifically, Circular Letter 343 includes “a non-exhaustive list of possible types of information that might be requested to verify the transmitting and receiving capability of a satellite” provided “[i]n order to avoid possible misinterpretation of the meaning of ‘with the capability of transmitting or receiving that frequency assignment’ and to elaborate on the manner in which the Bureau would apply” No. **11.44B**.<sup>5</sup> The only items on that list concern the identification of the satellite and its technical parameters. While the list mentions the license application as one example of a document that might be sought to provide evidence of technical capability, it does not suggest or require that the Bureau would need to review the resulting license or other legal authorization.

In contrast to this extensive evidence that No. **11.44B**’s reference to “capability” means the technical capacities of the satellite, the Netherlands Administration’s suggestion that the term was intended to connote legal authority is completely unsupported by the language of the provision or by any authoritative interpretations of its meaning. Yet this unsubstantiated misinterpretation of No. **11.44B** is the foundation for the Netherlands arguments regarding the restricted scope of the U.S. Special Temporary Authorization (“STA”) pursuant to which EchoStar 6 was authorized to move to and operate at the nominal 96.2° W.L. orbital location and the differences between the services sanctioned by that STA and the terms of the BERMUDASAT-1 filing.

As discussed in Attachment 1, these arguments misrepresent the underlying facts, but the Board need not consider them at all. Instead, the Board’s determination of whether EchoStar 6 has the “capability of transmitting or receiving” the BERMUDASAT-1 frequency assignments must focus solely on what the satellite is technically capable of, not what the satellite was authorized to do.

**b. As the Bureau has already found, EchoStar 6 is technically capable of transmitting and receiving the BERMUDASAT-1 frequency assignments.**

In response to prior submissions by the Netherlands Administration, the Bureau performed “an in-depth review” of the information relating to the bringing into use of BERMUDASAT-1 and “concluded that the EchoStar 6 satellite has the capability of transmitting or receiving the

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<sup>4</sup> The referenced document is provided in Attachment 2 (Emphasis added).

<sup>5</sup> See Circular Letter 343, from the Director of the Radiocommunication Bureau, dated 31 January 2013, at Page 3.

frequency assignments in accordance with the notified characteristics of the BERMUDASAT-1 satellite network.”<sup>6</sup> The Bureau later reconfirmed this finding.<sup>7</sup> The Netherlands Fax provides no basis for reconsidering the Bureau’s past holdings on this matter.

As we have previously demonstrated, EchoStar 6 has the capability to operate on all 32 frequency assignments of BERMUDASAT-1 and can be configured to perform consistently with the parameters described in the BERMUDASAT-1 filing.<sup>8</sup> We briefly reiterate the substance of this information below:

- Geographic coverage pattern: Although the operator of EchoStar 6 sought authority for an easterly shifted coverage for reasons unique to the U.S. regulatory framework, the satellite is fully capable of being repointed over the U.S. to conform to the coverage described in the BERMUDASAT-1 filing. To illustrate EchoStar 6’s capability, we are providing example contours of EchoStar 6 shifted to match the service area of BERMUDASAT-1 in Attachment 3.<sup>9</sup> The amount of repointing for the transmit and receive patterns to achieve a continental U.S. coverage from 96.2° W.L. is slightly less than 2 degrees in azimuth and approximately 0.1 degrees in elevation. This amount of pointing offset is well within the capabilities of the attitude control system for EchoStar 6, which is a standard Space Systems Loral FS1300 spacecraft bus.
- Transmit power and peak EIRP: EchoStar 6 has transponders that can operate in two different modes, either fixed gain mode or automatic level control mode. In fixed gain mode, the transponders have a fixed gain adjustable up to 36 dB in 1 dB increments. For transponders operating in automatic level control mode the dynamic range is 18 dB with 0.5 dB increments. Each configuration is commandable from the ground to set and operate at the required output levels. Therefore, the peak EIRP of the satellite (as well as the pointing of the transmit/receive patterns) may be adjusted as needed to comply with coordination requirements and the notified characteristics of BERMUDASAT-1.
- Channel plan: The polarization and channel plan for EchoStar 6 is the same as the notified characteristics for BERMUDASAT-1. Specifically, the odd channels are right hand circularly polarization and the even channels are left hand circularly polarized.

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<sup>6</sup> See 19 February 2013 letter from Mr. Yvon Henri, Chief, Space Services Department, BR to the Radiocommunications Agency Netherlands (provided on Pages 48-49 of Document RRB14-2/15).

<sup>7</sup> See 12 March 2014 letter from Mr. Francois Rancy, Director, BR to Mr. M.M. Hoogland MSc. MBA, Head, Networks Department, Radiocommunications Agency Netherlands (provided on Pages 27-28 of Document RRB14-2/15).

<sup>8</sup> See 15 January 2014 letter from Stephen Limb to Mr. Sakamoto (provided on Pages 68-75 of Document RRB14-2/15) and the 13 February 2014 letter from Stephen Limb to the Space Services Department (provided on Pages 50-67 of Document RRB14-2/15).

<sup>9</sup> This is the same diagram provided in Attachment 2 of the 13 February 2014 letter from Stephen Limb to the Space Services Department (provided on Page 67 of Document RRB14-2/15).

We are again providing supporting evidence (the FCC application for EchoStar 6) of these technical characteristics with this letter in Attachment 4.<sup>10</sup>

In conclusion, the documentation this Administration has provided validates the Bureau's past findings that EchoStar 6 is capable of operating consistent with the BERMUDASAT-1 notified characteristics, as required by No. 11.44B. The scope of the U.S. authority pursuant to which EchoStar 6 is operating has no bearing on this matter.

**2. The U.S. statement that it did not object to the U.K.'s use of EchoStar 6 to bring into use the BERMUDASAT-1 filing satisfies WRC-12's satellite sovereignty rule.**

The second argument the Netherlands relies on is similarly an obvious misinterpretation of applicable requirements. Specifically, the Netherlands Administration claims that the "U.S. Administration has not provided the consent necessary under the minutes of WRC-12" to permit a satellite subject to U.S. licensing authority to be employed to bring into use the U.K. Administration's BERMUDASAT-1 filing.

Contrary to the Netherlands allegation, the satellite sovereignty principle set forth at WRC-12 does not require the consent of the licensing administration in these circumstances. Accordingly, the Netherlands is mistaken in claiming that the statements of the U.S. administration are insufficient. WRC-12 adopted the following formulation:

WRC-12 recognizes that an administration can bring into use, or continue the use of, frequency assignments for one of its satellite networks by using a space station which is under the responsibility of another administration or intergovernmental organization, *provided that this latter administration or intergovernmental organization, after having been informed, does not object, within 90 days from the date of receipt of information, to the use of this space station for such purposes.*<sup>11</sup>

Thus, as long as the licensing administration does not raise an objection within 90 days after it is informed of the intended reliance on its licensed satellite to bring into use another administration's filing, the satellite sovereignty requirements are satisfied.

The U.S. Administration did not object to the U.K. Administration's plan to bring into use BERMUDASAT-1 with the EchoStar 6 satellite, and the relevant 90-day period has long since passed. This Administration discussed the satellite sovereignty provisions from WRC-

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<sup>10</sup> See page 6 of FCC Form 312 Schedule S for the EchoStar 6 FCC application. These are the same FCC documents provided in Attachment 1 of the 13 February 2014 letter from Stephen Limb to the Space Services Department (the frequency plan is provided on Pages 60-61 of Document RRB14-2/15).

<sup>11</sup> See Circular Letter 333 from the Director of the Radiocommunication Bureau, dated 2 May 2012, at Page 2 (emphasis added).

12 with the U.S. Administration and reached an agreement with respect to EchoStar 6 and BERMUDASAT-1 that is reflected in two public licensing decisions issued by the U.S. Federal Communications Commission (“FCC”) in 2013.<sup>12</sup> The FCC stated:

with respect to Paragraph 3.2 of the Minutes of the 13<sup>th</sup> Plenary meeting of WRC-12 (as set out in ITU Circular Letter CR/333), the FCC will not object to the U.K. Administration bringing into use the BERMUDASAT-1 network, subject to ratification by both the U.S. and U.K. Administrations of the DIRECTV/SES Bermuda operator-to-operator arrangement.<sup>13</sup>

The U.S. and U.K. Administrations subsequently completed ratification of the DIRECTV/SES Bermuda operator-to-operator arrangement on 4 April 2013 and 29 March 2013, respectively, thereby satisfying the only condition precedent to the FCC’s non-objection.

In light of this explicit statement of the U.S. Administration’s views, the fact that the FCC also stated that it was not expressing a view on the validity of any ITU filings is irrelevant. As the U.S. Administration rightly recognized, it does not have jurisdiction to decide ITU regulatory matters – these are instead the purview of the ITU itself and the notifying administration for the BERMUDASAT-1 filing – the U.K.

**3. As the Bureau has concluded, the regulatory deadline for positioning EchoStar 6 at the nominal 96.2° W.L. orbital location was met.**

Finally, the Bureau’s determination that the BERMUDASAT-1 frequency assignments were brought into use “within the regulatory timeframe of Appendices 30 and 30A”<sup>14</sup> should stand. The evidence provided by the Netherlands confirms that EchoStar 6 was placed at the nominal 96.2° W.L. orbit location prior to 15 April 2013. Furthermore, the Netherlands fails to provide support for its suggestion that minor and temporary excursions outside the intended stationkeeping range for the satellite – which are to be expected when a satellite first arrives at its orbital location – should be viewed as disqualifying under No. 11.44B.

**a. Information supplied by the Netherlands verifies that relocation of EchoStar 6 occurred in advance of 15 April 2013.**

In a prior fax, the Netherlands supplied a graph of the positional data as recorded by the operator of EchoStar 6 for the 90 day period from April 13, 2013, when the satellite arrived at the nominal 96.2° W.L. orbital location, to July 13, 2013, the end of the 90 day period

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<sup>12</sup> See Paragraph 15 of the FCC’s Licensing Order for EchoStar 6 dated 1 April 2013 and paragraph 8 of the FCC’s Licensing Order for EchoStar 6 dated 8 July 2013 provided in Attachments 4 and 5, respectively, to this Administration’s 15 January 2014 letter (Pages 131 & 138, respectively, of Document RRB-14-2/15).

<sup>13</sup> Paragraph 15 of the FCC’s Licensing Order for EchoStar 6 dated 1 April 2013 provided in Attachment 4 to this Administration’s 15 January 2014 letter (Page 131 of Document RRB14-2/15).

<sup>14</sup> See 19 February 2013 letter from Mr. Yvon Henri, Chief, Space Services Department, BR, to the Radiocommunications Agency Netherlands (provided on Pages 48-49 of Document RRB14-2/15).

referenced in No. **11.44B**.<sup>15</sup> In order to position the moving satellite at the 96.2° W.L. orbital position, a series of braking maneuvers was applied. This Administration recognizes, and experienced satellite operators understand and accept, that there is inevitably a degree of measurement uncertainty during satellite maneuvering and orbit determination. Such uncertainty is only magnified under the complicating circumstances of this move – EchoStar, the satellite operator, had just assumed direct control of the satellite from a third party TT&C provider shortly before the drift started, and the satellite was moving at a high rate of drift during its relocation (approximately 2.7 degrees per day). Positioning the satellite in the planned stationkeeping box was accomplished with additional, routine corrective maneuvers, including increasing the number of ranging stations on the satellite from two to three in the days immediately following arrival.

In October of 2013, based on an investigation, the satellite operator determined that, during the satellite control handover process from the third party TT&C provider, an incorrect spacecraft calibration parameter had been inserted into a calibration file used for spacecraft ranging. When the calibration parameter was corrected, the resulting orbital solutions indicated that the satellite operator's original tracking data and calculations reflected a slight 0.035° to 0.040° westward bias, and thus EchoStar 6's actual orbital location was 0.035° to 0.040° further east. Commencing at the end of October of 2013, the satellite operator has controlled the TT&C operations and movement of EchoStar 6 using the new orbital solutions. The satellite operator has confirmed that the new data is accurate and is confident that the new orbital solutions have resolved the tracking data error and have yielded correct and reliable tracking data.

However, the Netherlands ignores this updated data which it had reviewed in its 26 May 2014 letter, and instead relies on the original data that the satellite operator had recorded, which both the satellite operator and this Administration have reported had an incorrect bias. Figure 1 of the Netherlands Fax (Page 9 of RRB14-2/15) captures this original data.<sup>16</sup>

This Administration urges the Board to review the corrected data found on Page 74 of Document RRB14-2/15, which is the most accurate representation of the position of

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<sup>15</sup> See Figure 1 of the Netherlands' 26 May 2014 letter to Mr. Henri (Page 18 of RRB14-2/15). The data recorded by the satellite operator is shown in blue on Figure 1, and also provided as Attachment 1 to the this Administration's January 15, 2014 letter. As discussed below, that data was subsequently corrected. This Administration is not in a position to confirm the accuracy of the additional material that the Netherlands added to Figure 1.

<sup>16</sup> Figure 2 of The Netherlands' 26 May 2014 letter to Mr. Henri (Page 19 of RRB14-2/15) depicts EchoStar 6's east-west orbital movement and location, based upon tracking data and calculations correcting for the bias from April 13 (i.e., EchoStar's 6's initial arrival at 96.2° W.L.) to the end of October (i.e., when the satellite operator began implementing the new orbital solutions), as well as tracking data obtained since the satellite operator's implementation of the new orbital solutions (i.e., from November through December). The data recorded by the satellite operator is shown in blue on Figure 2, and also provided as Attachment 2 to the this Administration's January 15, 2014 letter (Page 74 of RRB14-2/15). This Administration is not able to confirm the accuracy of the additional material that the Netherlands added to Figure 2.

EchoStar 6 during the period in question. As the Radiocommunication Bureau found in February of this year and reconfirmed in March,<sup>17</sup> this data shows that:

- The EchoStar 6 satellite was deployed and has been maintained at the notified orbital position for a continuous period of 90 days since 13 April 2013 with a stationkeeping of +/- 0.1 degrees in the E-W direction in accordance with Section 3.11 of Annex 5 to Appendix 30;
- EchoStar 6 has the capability to maintain its position within the planned longitudinal tolerance in the E-W direction (Appendix 4 Item A.4.a.2) of 0.05 degrees.
- No unacceptable interference was reported when the satellite's excursion exceeded this planned tolerance.

This Administration remains satisfied that the EchoStar 6 satellite was moved from its original location of 77° W.L. and placed at the nominal 96.2° W.L. orbital position before the regulatory deadline of 15 April 2013.

- b. **Under the Radio Regulations, EchoStar 6 was *not* required to remain within the +/- 0.05° stationkeeping box published for BERMUDASAT-1 during the entire 90 day period specified in No. 11.44B to bring that filing into use.**

The minor departures by EchoStar 6 from a +/- 0.05° stationkeeping tolerance after its arrival at 96.2° W.L. are not material and do not negate compliance with No. 11.44B. To the contrary, the Radio Regulations recognize the practical need for some flexibility in the stationkeeping box of spacecraft around their notified orbital positions. First, with respect to planned BSS, Appendix 30 (Section 3.11 of Annex 5) allows for a stationkeeping tolerance of +/-0.1 degrees. In addition, Nos. 22.10 and 22.14 allow for wider stationkeeping boxes beyond the typical standard of +/-0.1 degrees as long as no interference is caused to other operational networks. There is no question that EchoStar 6's transient excursions from its planned stationkeeping box in the days immediately following its arrival at 96.2° W.L. could not have caused any interference into the Netherlands' network, which is not yet in operation.

Consistent with the flexibility inherent in Nos. 22.10 and 22.14 and Appendix 30, the notification requirements in No. 11.44B and Appendix 4 do not require operators to specify a strict stationkeeping box. Instead, No. 11.44B simply specifies that a satellite should be at the "notified orbit location" for the requisite period. In turn, Appendix 4 requires such notification to include the "nominal geographic longitude" (Appendix 4, Annex 2, Item A.4.a.1) together with "the planned longitudinal tolerance easterly limit" and "the planned longitudinal tolerance westerly limit" in Items A.4.a.2.a and A.4.a.2.b of Annex 2 to Appendix 4. The use

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<sup>17</sup> See 19 February 2013 letter from Mr. Yvon Henri, Chief, Space Services Department, BR to the Radiocommunications Agency Netherlands (provided on Pages 48-49 of Document RRB14-2/15) and the 12 March 2014 letter from Mr. Francois Rancy, Director, BR to Mr. M.M. Hoogland MSc. MBA, Head, Networks Department, Radiocommunications Agency Netherlands (provided on Pages 27-28 of Document RRB14-2/15).

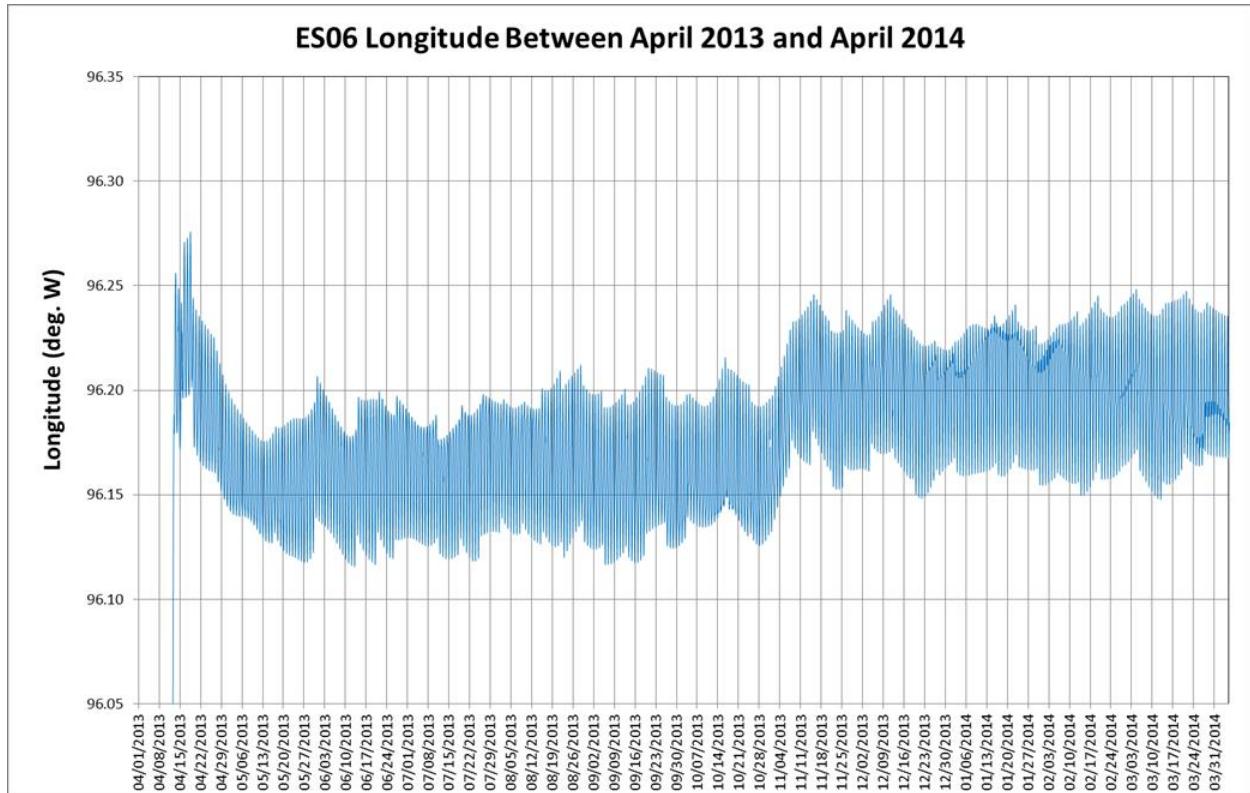
of the term “planned” indicates an expectation that minor deviations are possible and do not affect the validity of the notification.

In this case, the EchoStar 6 satellite, while operating under the BERMUDASAT-1 filing, had a planned longitudinal tolerance of +/- 0.05 degrees, consistent with the Part B publication of BERMUDASAT-1. The satellite orbit did, as discussed above, require some corrections to settle within the “planned” box around the 96.2° W.L. nominal orbital position. These corrections were implemented in a thoughtful, deliberate and technically sound manner. The satellite is now operating at its nominal orbit location within its planned longitudinal tolerance as demonstrated by the following plot of the satellite operator’s data on the location of EchoStar 6 from approximately April 13, 2013, through the end of March 2014.<sup>18</sup>

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<sup>18</sup> This data reflects the orbital solutions for EchoStar 6 as corrected in October 2013. This data is more accurate than the NORAD data that the Netherlands attempts to use to show that EchoStar 6 was outside of its planned longitudinal box in the period from approximately December 2013 through the end of March 2014 in Figure 3 of The Netherlands’ 26 May 2014 letter to Mr. Henri (Page 20 of RRB14-2/15). The data recorded by the satellite operator is shown in blue on Figure 3 of that letter (and previously provided to the Bureau in our 15 January 2014 letter), and the Netherlands claims to overlay NORAD data on it. There are well-known limitations on use of NORAD data for predicting the precise location of a spacecraft versus its average location over time. Further, the conversion of NORAD TLE to longitude is dependent on the orbit propagation software utilized. Each NORAD TLE is a snapshot of the spacecraft’s location at a single point in a day, and often observations are only made once every several days, so critical changes in a spacecraft location can be missed. The satellite operator, in contrast, measures the orbit several times a day, both before and after maneuvers. When the NORAD data is notably different from the blue operator data in Figure 3 (e.g., the red dot above 96.25° W.L. in mid-July), it is likely that the TLE was taken immediately prior to a spacecraft maneuver.

**Figure 1.** Satellite Operator Data on EchoStar 6's Location from April 2013 to April 2014



The Board should also consider the practical implications of an overly strict interpretation of No. 11.44B with respect to stationkeeping. There are numerous situations where satellites have operated for a short period of time – or even for years – at an offset from their nominal filed orbital positions or with a wider stationkeeping box than their planned longitudinal tolerance, for example to facilitate co-location of multiple satellites at an orbital position. An unduly stringent reading of No. 11.44B would unnecessarily call the validity of such operations into question, and thus should be avoided.

\* \* \*

For all of these reasons, and those expressed by this Administration in its prior letters on this matter, the entry of BERMUDASAT-1 in the Region 2 BSS Plans and the Master Register should be maintained.

It would be appreciated if you could confirm receipt of this communication via email to [ifc.enquiries@ofcom.org.uk](mailto:ifc.enquiries@ofcom.org.uk).

Yours sincerely

Dr Tony Azzarelli

Head, Space and Science Services

## ATTACHMENT 1

### Supplemental Response to Netherlands Fax

As discussed in the preceding letter, the three arguments raised by the Netherlands Administration in support of its request for cancellation of the BERMUDASAT-1 filing's entry in the Master Register are invalid and provide no basis for revisiting the Bureau's decision that BERMUDASAT-1 was brought into use consistent with applicable ITU rules and policies. The Netherlands make a number of other arguments that need not be considered by the Board as they are not relevant to these matters. Nevertheless, for the sake of completeness of the record, this Administration responds herein to those extraneous claims.

#### **1. Operation of EchoStar 6 was authorized by Bermuda and the U.K.**

Contrary to statements in the Netherlands Fax, Bermuda, acting within its authority as a U.K. Overseas Territory and with the full knowledge and consent of this Administration, has expressly authorized operation of EchoStar 6 pursuant to the BERMUDASAT-1 filing. The satellite's operations also conform fully with the policies of this Administration, including the requirements provided in the U.K.'s "Procedure for the management of satellite filings," which also regulates filings for the U.K. Overseas Territories.

The Government of Bermuda issued a letter on 20 February 2013 confirming that it had authorized operation of EchoStar 6. The operator holds all authorizations required under the Bermuda Satellite Network Notification and Coordination Regulations 2007, including a Certificate of Compliance, a Certificate of Competence to Engage in Coordination, a Certificate of Coordination, and a 15-year licence, all duly issued by the Minister of Economic Development for the Government of Bermuda and the Bermuda Regulatory Authority.

This Administration is satisfied that the authority and licenses issued by Bermuda with respect to EchoStar 6 are sufficient and there is no additional requirement to obtain a licence from the U.K., including Ofcom in its capacity as the U.K. Administration. Again, however, because a satellite's legal authority is not material under No. **11.44B**, the Board does not need to address this issue.

#### **2. The U.S. authorization for EchoStar 6 remains in effect, and its specifications do not affect the validity of bringing into use BERMUDASAT-1.**

The Netherlands Fax also repeatedly and erroneously suggests that the duration and other terms of the FCC STA pursuant to which EchoStar 6 was relocated to the nominal 96.2° W.L. orbital location raise questions regarding this Administration's showing that BERMUDASAT-1 was successfully brought into use. First, the Netherlands observes that the only FCC STA grant was for a 60-day term and argues that this period "was too short to satisfy the 90-day bringing into use period."<sup>1</sup> In fact, however, FCC policy expressly permits continued operations under an initial grant of authority provided that a request for renewal of the authority was timely filed. We

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<sup>1</sup> The Netherlands Fax, Page 6 of Document RRB14-2/15,

are advised that such renewed authority was sought here by EchoStar, and therefore the FCC's grant remains in effect.

Second, the Netherlands Administration mistakenly argues that certain FCC statements are inconsistent with the notification of the BERMUDASAT-1 frequency assignments. For example, the FCC stated that it was authorizing only FSS and MSS operations by EchoStar 6, not BSS operations. However, the Netherlands neglects to note that the FCC recognized that the definition of BSS overlaps with the definitions of FSS and MSS. Unlike FSS, and regardless of the many erroneous statements in the Netherlands Fax, the definition of BSS in No. **1.39** of the Radio Regulations does *not* refer to fixed earth stations. As a result, BSS is used in the U.S. today to provide service to mobile earth stations aboard ships and airplanes. For example, DIRECTV provides service from 101° W.L. to Jetblue aircraft.<sup>2</sup> Furthermore, FSS allocations are often used to provide direct-to-home services. As the Netherlands Fax recognizes, there are footnotes to the Radio Regulations that specifically allow for FSS use of BSS assignments (see No. **5.492**). Service to both mobile and fixed earth stations is clearly allowed under the BSS definition. Thus, the service restrictions in the FCC STA are irrelevant on the issue of bringing into use BSS frequency assignments. Moreover, this Administration believes that the FCC's references to FSS and MSS and its statement that it was not authorizing EchoStar 6 to operate "pursuant to" a filing under the BSS Plan were intended to address the FCC's perceived obligations under the ITU Radio Regulations for its own spacecraft. The U.S. Administration was not submitting its own modification to the Plan in connection with operation of EchoStar 6, and we understand that the FCC's practice in these situations is to rely on No. **4.4** of the Radio Regulations. Furthermore, the FCC's International Bureau indicated that it viewed "the operations authorized by [the] STA" as FSS and MSS in the context of addressing U.S. obligations under ITU rules.<sup>3</sup> Whether or not the Board agrees with the FCC's interpretation of its responsibilities pursuant to the ITU rules, the FCC's statements do not conflict with reliance on EchoStar 6 to bring the BERMUDASAT-1 frequency assignments into use, especially as the FCC expressly stated that it will not object to such action under the WRC-12 satellite sovereignty rules.

In any event, the specific limitations set forth in the STA grant are irrelevant here, as only the EchoStar 6 technical capabilities – not its legal authority – matter under No. **11.44B**.

### **3. The differences between the BERMUDASAT-1 Part A and Part B filings reflect the results of coordination between Administrations as intended under ITU regulation.**

The Netherlands Administration also highlights differences between the BERMUDASAT-1 Part A and Part B filings, which only demonstrate that they are the result of the expected outcome of the international coordination process.

In fact, Appendices **30** and **30A** specifically envision and allow changes between a Part A publication and a Part B publication. Section 4.2.16 of Appendix **30** and the corresponding

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<sup>2</sup> See <http://www.jetblue.com/flying-on-jetblue/directv/>.

<sup>3</sup> Paragraph 16 of the FCC's Licensing Order for EchoStar 6 dated 1 April 2013, provided in Attachment 4 to this Administration's 15 January 2014 letter (also provided on Page 131 of Document RRB14-2/15).

Section 4.2.16 of Appendix **30A** state that once all necessary agreements have been reached, “the administration proposing the modification may continue with the appropriate procedure in Article **5**, and shall so inform the Bureau, *indicating the final characteristics of the frequency assignment* together with the names of the administrations with which agreement has been reached.” (Emphasis added.) Further, Section 4.2.16bis of Appendix **30** and the corresponding Section 4.2.16bis of Appendix **30A** state that in applying Section 4.2.16, an administration may “indicate the changes to the information communicated to the Bureau under § 4.2.6 and published under § 4.2.8.” The publication under Section 4.2.8 is commonly referred to as the Part A publication or Special Section. Thus, contrary to the Netherlands’ suggestion, the Radio Regulations expressly acknowledge and even expect that changes will be made to the information submitted originally and published as a Part A Special Section. Otherwise, there would be no reason even to permit the filing of Part B Special Sections.

Moreover, the flexibility to incorporate modifications is critical to the agreement-seeking process envisioned by Appendices **30** and **30A**. Without such flexibility, there would be no means to pursue an agreement because the necessary steps to implement the agreement, such as committing to reduce EIRP levels at certain test points, could not be carried out.

As this process is clearly envisioned and codified in the Radio Regulations, there are numerous examples in which satellite network filings have been modified after the Part A publication. For example, the MEX-TDH1 successfully modified the Region 2 BSS Plans for a single orbital location at 77.0° W.L. following Part A publications for MEX-TDH1A and MEX-TDH1B, at 77.2° W.L. 76.8° W.L., respectively.<sup>4</sup>

In the case of BERMUDASAT-1, the changes between the Part A and B publications were necessary in order to implement the coordination agreement reached between this Administration and the U.S. Administration with respect to U.S. ITU filings at 101° W.L. and to resolve other coordination issues. Thus, contrary to the suggestions in the Netherlands Fax, the variations between the BERMUDASAT-1 Part A and Part B publications were fully compliant with ITU rules and consistent with the objective of facilitating the negotiation and enforcement of coordination agreements.

#### **4. The inclined orbit operation of EchoStar 6 is consistent with ITU rules and does not affect the validity of bringing into use BERMUDASAT-1.**

Finally, EchoStar 6’s inclined orbit is entirely consistent with ITU rules and does not affect the validity of bringing into use BERMUDASAT-1. The only limitation on inclination in the Radio Regulations is found in No. **A.9.6A** and No. **A.11.4A**. The intent of these provisions is to distinguish between geostationary and non-geostationary networks in the application of the coordination provisions in Articles **9** and **11**. Information on inclination is sought in Appendix **4**, where administrations are asked to specify the planned inclination excursion for satellite

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<sup>4</sup> See MEX-TDH1 Part B Special Section Ap30-30A/E/129 in BR IFIC 2557 dated 15 November 2005, and MEX-TDH1A and MEX-TDH1B Part A Special Sections ApS30/E/129 and ApS30A/E/129 in BR IFIC 2409 dated 21 December 1999.

network filings.<sup>5</sup> Here, as with the east-west station keeping tolerances in Appendix 4, the information requested is the “planned” tolerance and in no way implies a limitation on the actual operation of the spacecraft.

Should such a limitation be developed, there would be far-reaching implications for many satellite networks, well beyond BERMUDASAT-1.

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<sup>5</sup> See Appendix 4, Section A.4.a.2.c. There are, however, numerous references to inclination in reference to earth station coordination, such as in Appendix 7.

## ATTACHMENT 2

WRC-12 Document titled "Instructions to COM-5 Adhoc.doc"

As a consequence of a meeting on the evening of Friday, 10 February in CICG room 15 to discuss the compromise way forward on the issues of Bringing into use, suspension of use, and Resolution 49, the following was agreed as a consensus compromise to the future work of the ad hoc group:

- 1) Brining into use shall be defined as follows
  - having a satellite deployed (i.e. stopped) at the notified orbital location
  - the satellite must have the technical capabilities to support frequency assignments in all frequency bands that are being brought into use
  - some form of communication must be taking place with the satellite (TT&C is sufficient)
  - the satellite shall remain at the notified location for a minimum period of 90 days
- 2) Suspension of use – The meeting agreed the following consensus aspects on this issue:
  - Any suspension lasting less than 6 months need not be reported to the ITU
  - Suspension needs to be reported to ITU within 6 months of start of suspension
  - If a new satellite is to be constructed to recover from suspension, it would take on the order of 3 years to construct such a satellite

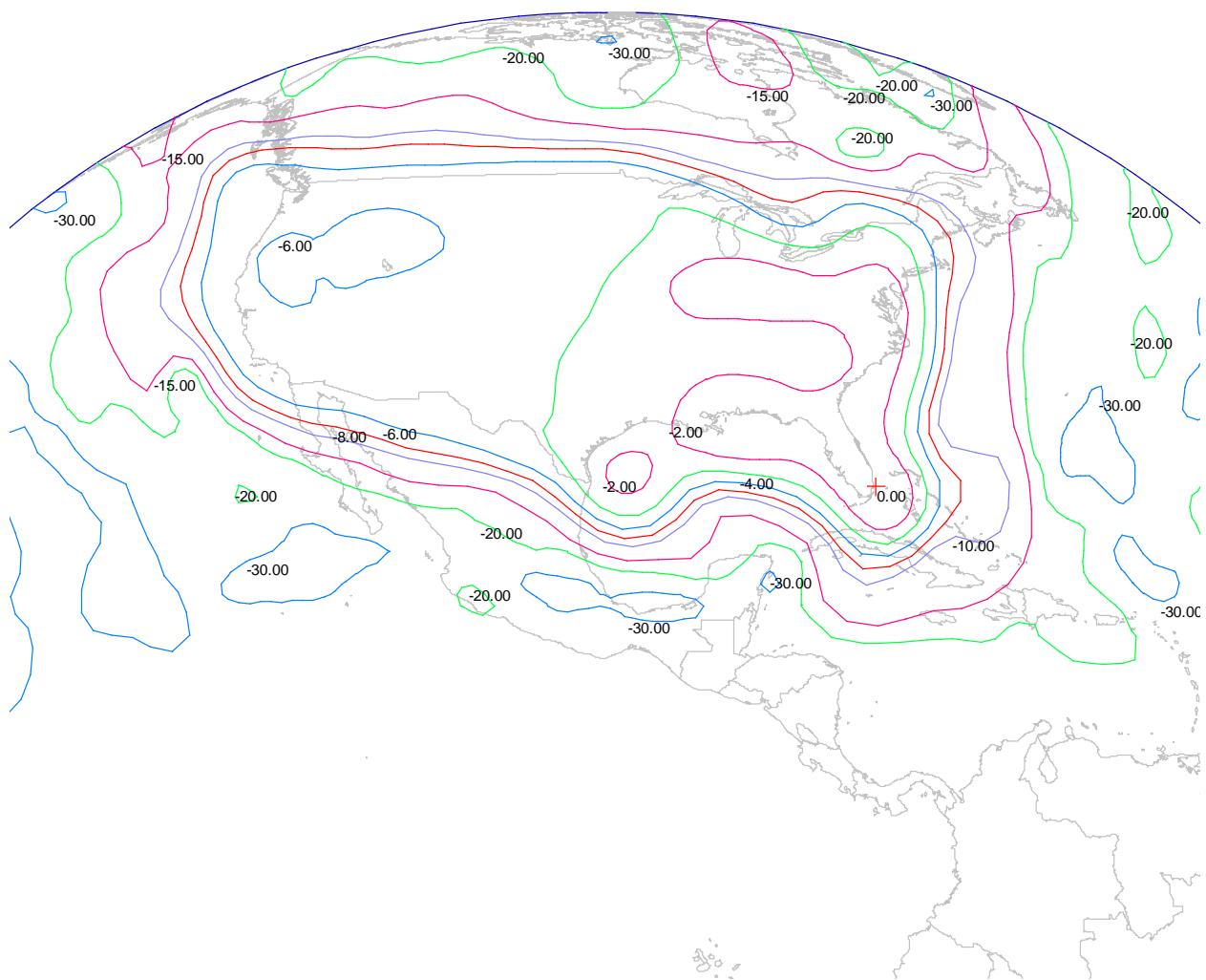
The Ad hoc group shall discuss and decide upon the maximum suspension period

- 3) Resolution 49 – NOC to this Resolution at this WRC.

The Chairman of the Ad-hoc group was directed by the Chairman of the Conference not to reopen this consensus.

### ATTACHMENT 3

Example deployment of EchoStar 6 over the United States, Peak EIRP = 47.4 dBW/24 MHz



#### ATTACHMENT 4

FCC application for EchoStar 6 as amended 13 June 2013



Echo 6 Amendment  
6-13-13 Narrative.pdf



Echo 6 Amendment  
6-13-13 Sched S Tech

# **EXHIBIT 4**



UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS  
BUREAU DES RADIOPRÉPARATIONS

INTERNATIONAL TELECOMMUNICATION UNION  
RADIOPRÉPARATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES  
OFICINA DE RADIOPRÉPARACIONES

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RÉSEAU À SATELLITE SATELLITE NETWORK RED DE SATÉLITE	BERMUDASAT-1		SECTION SPÉCIALE N° SPECIAL SECTION No. SECCIÓN ESPECIAL N.º	AP30-30A/E/389
ADM. RESPONSABLE RESPONSIBLE ADM. ADM. RESPONSABLE	G	LONGITUDE NOMINALE NOMINAL LONGITUDE LONGITUD NOMINAL	96.2 W	BR IFIC / DATE BR IFIC / DATE BR IFIC / FECHA  2752 / 03.09.2013
NOTIFIÉ AU NOM DE NOTIFIED ON BEHALF OF NOTIFICADA EN NOMBRE DE			NUMÉRO D'IDENTIFICATION IDENTIFICATION NUMBER NÚMERO DE IDENTIFICACIÓN	105555002
RENSEIGNEMENTS REÇUS PAR LE BUREAU LE / INFORMATION RECEIVED BY THE BUREAU ON / INFORMACIÓN RECIBIDA POR LA OFICINA EL				11.04.2013

Caractéristiques des assignations de fréquence publiées en application de l'Article 4 des Appendices 30 et 30A du Règlement des radiocommunications

La présente Section spéciale concerne des modifications apportées au Plan pour la Région 2 dans les bandes de fréquences 12.2-12.7 GHz pour les liaisons descendantes et 17.3-17.8 GHz pour les liaisons de connexion.

Characteristics of frequency assignments published in application of Article 4 of Appendices 30 and 30A to the Radio Regulations

This Special Section concerns modifications to the Region 2 Plan in the frequency bands 12.2-12.7 GHz for the downlink and 17.3-17.8 GHz for the feeder-link.

Características de asignaciones de frecuencias publicadas conforme al Artículo 4 de los Apéndices 30 y 30A del Reglamento de Radiocomunicaciones

Esta Sección Especial trata de las modificaciones al Plan de la Región 2 en las bandas de frecuencias 12.2-12.7 GHz por los enlaces descendentes y 17.3-17.8 GHz por los enlaces de conexión.

Elle comprend les Parties indiquées ci-dessous par une croix (X) dans la case appropriée.	It is composed of the Parts indicated below by an (X) in the relevant box	Se compone de las Partes indicadas a continuación con una (X) en la casilla pertinente.
<input type="checkbox"/> Partie A - Projets de modification au Plan pour la Région 2.	<input type="checkbox"/> Part A - Proposed modifications to the Region 2 Plan.	<input type="checkbox"/> Parte A - Modificaciones propuestas al Plan de la Región 2.
<input checked="" type="checkbox"/> Partie B - Modifications apportées au Plan pour la Région 2 en conséquence de l'application avec succès des dispositions de l'Article 4 des Appendices 30 et 30A.	<input checked="" type="checkbox"/> Part B - Modifications entered in the Region 2 Plan as a result of the successful application of the provisions of Article 4 of Appendices 30 and 30A.	<input checked="" type="checkbox"/> Parte B - Modificaciones introducidas en el Plan de la Región 2 como resultado de la aplicación satisfactoria de las disposiciones del Artículo 4 de los Apéndices 30 y 30A.
<input type="checkbox"/> Partie C - Annulation d'une Section spéciale Partie A publiée et/ou des assignations de fréquence du Plan pour la Région 2 conformément au § 4.2.6, à la note de bas de page 16 du § 4.2.8, à la note de bas de page 17 du § 4.2.19 et/ou § 4.2.24 de l'Article 4 des Appendices 30 et 30A ou Résolution 49.	<input type="checkbox"/> Part C - Cancellation of a previously published Part A Special Section and/or frequency assignments from the Region 2 Plan in accordance with § 4.2.6, footnote 16 to § 4.2.8, footnote 17 to § 4.2.19 and/or § 4.2.24 of Article 4 of Appendices 30 and 30A or Resolution 49.	<input type="checkbox"/> Parte C - Cancelación de una Parte A de la Sección Especial previamente publicada y/o de las asignaciones de frecuencia del Plan de la Región 2, de conformidad con el § 4.2.6, la nota 16 del § 4.2.8, la nota 17 del § 4.2.19 y/o § 4.2.24 del Artículo 4 de los Apéndices 30 y 30A o Resolución 49.
<input type="checkbox"/> Partie D - Liste des administrations dont l'accord est nécessaire pour mener à bien la procédure de l'Article 4 conformément au § 4.2.14ter de l'Article 4 des Appendices 30 et 30A.	<input type="checkbox"/> Part D - List of administrations whose agreements are required for completion of the Article 4 procedure in accordance with § 4.2.14ter of Article 4 of Appendices 30 and 30A.	<input type="checkbox"/> Parte D - Lista de administraciones cuyo acuerdo se necesita para terminar el procedimiento del Artículo 4, de conformidad con el § 4.2.14ter del Artículo 4 de los Apéndices 30 y 30A.

卫星网络 СПУТНИКОВАЯ СЕТЬ الشبكة الصناعية		BERMUDASAT-1		特节编号 СПЕЦИАЛЬНАЯ СЕКЦИЯ № القسم الخاص رقم	AP30-30A/E/389
负责主管部门 ОТВЕТСТВЕННАЯ АДМ. الإدارة المسؤولة	G	标称经度 НОМИНАЛЬНАЯ ДОЛГОТА خط الطول الاسمي	96.2 W	无线电信局国际频率信息通报/日期 ИФИК БР / ДАТА الشارة الإعلامية الدولية للتردودات/رقمها و تاريخها	2752 / 03.09.2013
通知代表方 ЗАЯВЛЯЕТСЯ ОТ ИМЕНИ مبلغ عنها باسم				识别号 ИДЕНТИФИКАЦИОННЫЙ НОМЕР رقم تعرف الموجة	105555002
通信局收到资料的日期 / ДАТА ПОЛУЧЕНИЯ ИНФОРМАЦИИ БЮРО / معلومات استلمها المكتب في					11.04.2013

应用无线电规则附录30和30A第4条公布的频率指配的特性

Характеристики частотных присвоений, публикуемые во исполнение Статьи 4 Приложений 30 и 30A к Регламенту радиосвязи

خصائص الترددات المخصصة المشورة تطبقاً للمادة 4  
من التدابير 30 و 30A للوائح الراديوي

يتعلق هذا القسم الخاص بالتعديلات التي أدخلت في خطة الإقليم 2 في نطاقي التردد 12,2-12,2 GHz 17,8-17,3 GHz للوصلات الفايبرية و 17,8-17,3 GHz لوصلات التغذية.

由下列相关括号内用X表示的部分组成	Она состоит из Части, отмеченных ниже знаком (X) в соответствующей графе.	وهو يتألف من الأجزاء المشار إليها فيما يلي بالرمز (X) في المربع المناسب.
<input type="checkbox"/> A部分 - 对2区规划的建议修改。	<input type="checkbox"/> Часть A - Предложенные изменения Плана для Района 2.	<input type="checkbox"/> [ الجزء A - تعديلات يقترح إدخالها في خطة الإقليم 2 .]
<input checked="" type="checkbox"/> B部分 - 由于成功地应用附录30和30A第4条规定而登录2区规划的修改	<input checked="" type="checkbox"/> Часть B - Изменения в Плане для Района 2, внесенные в результате успешного применения положений Статьи 4 Приложений 30 и 30A.	<input checked="" type="checkbox"/> [ الجزء B - تعديلات أدخلت في خطة الإقليم 2 نتيجة بخراج تطبيق أحكام المادة 4 من التدابير 30 و 30A .]
<input type="checkbox"/> C部分 - 根据附录30和30A第4条第4.2.6段脚注16至第4.2.8段脚注17到第4.2.19段和/或第4.2.24段或根据第49号决议，删除一个以前公布的A部分特节和/或2区规划中的频率指配。	<input type="checkbox"/> Часть C - Аннулирование ранее опубликованной Части А Специальной секции и/или частотных присвоений в Плане для Района 2 в соответствии с п. 4.2.6, примечанием 16 п. 4.2.8, примечанием 17 п. 4.2.19 или п. 4.2.24 Статьи 4 Приложений 30 и 30A или Решением 49.	<input type="checkbox"/> [ الجزء C - إلغاء قسم خاص للجزء A منشور سابقاً و/أو تخصيصات تردد ملغية من خطة الإقليم 2 طبقاً للفقرة 4.2.6، والخاصة 16 للفقرة 4.2.8، والخاصة 17 للفقرة 4.2.19 و/أو الفقرة 4.2.24 من المادة 4 في التدابير 30 و 30A أو القرار 49 .]
<input type="checkbox"/> D部分 - 根据附录30和30A第4条第4.1.10之三段程序，为完成第4条程序而需征得同意的主管部门清单。	<input type="checkbox"/> Часть D - Список администраций, соглашение которых необходимо, чтобы завершить процедуру Статьи 4 в соответствии с п. 4.2.14ter Статьи 4 Приложений 30 и 30A.	<input type="checkbox"/> [ الجزء D - قائمة الإدارات التي تتعبر موافقتها ضرورية لإنجاز إجراء المادة 4 طبقاً للفقرة 4.2.14ter من المادة 4 من التدابير 30 و 30A .]

<p>On trouvera la description des éléments de données utilisés dans les publications dans le document:</p> <ul style="list-style-type: none"> <li>- <a href="#">ItemsDescription_F.pdf</a></li> <li>- <a href="http://www.itu.int/ITU-R/space/brific/legend/">http://www.itu.int/ITU-R/space/brific/legend/</a></li> </ul>	<p>The description of the data items used in the publications can be found in the document:</p> <ul style="list-style-type: none"> <li>- <a href="#">ItemsDescription_E.pdf</a></li> <li>- <a href="http://www.itu.int/ITU-R/space/brific/legend/">http://www.itu.int/ITU-R/space/brific/legend/</a></li> </ul>	<p>La descripción de los datos empleados en las publicaciones figura en el documento:</p> <ul style="list-style-type: none"> <li>- <a href="#">ItemsDescription_S.pdf</a></li> <li>- <a href="http://www.itu.int/ITU-R/space/brific/legend/">http://www.itu.int/ITU-R/space/brific/legend/</a></li> </ul>
<p>出版物中使用的数据项说明，见文件：</p> <ul style="list-style-type: none"> <li>- <a href="#">ItemsDescription_C.pdf</a></li> <li>- <a href="http://www.itu.int/ITU-R/space/brific/legend/">http://www.itu.int/ITU-R/space/brific/legend/</a></li> </ul>	<p>Описание элементов данных, используемых в данной публикации, содержится в документе:</p> <ul style="list-style-type: none"> <li>- <a href="#">ItemsDescription_R.pdf</a></li> <li>- <a href="http://www.itu.int/ITU-R/space/brific/legend/">http://www.itu.int/ITU-R/space/brific/legend/</a></li> </ul>	<p>يمكن الاطلاع على وصف عناصر المعلمات المستعملة في المنشورات في الوثيقة:</p> <p style="text-align: right;"><a href="#">ItemsDescription_A.pdf</a>  <a href="http://www.itu.int/ITU-R/space/brific/legend/">http://www.itu.int/ITU-R/space/brific/legend/</a></p>

SECTION SPECIALE / SPECIAL SECTION / SECCIÓN ESPECIAL / 特节 / СПЕЦИАЛЬНАЯ СЕКЦИЯ / القسم الخاص								AP30-30A/E/389		
A1a Sat. Network [BERMUDASAT-1]	A1f1 Notifying adm. [G]	A1f3 Inter. sat. org. [ ]	BR1 Date of receipt [11.04.2013]	BR20/BR21 BR IFIC no./part [2752/]						
BR6a/BR6b Id. no. [105555002]	BR3a/BR3b Provision reference [4.2.16]	B	BR2 Adm. serial no. [ ]	UPSV R						
A1b Plan beam identification [ ]										
A1f2 Submitted on behalf [ ]										
A4a1 Orbital long. [96.2 W]	A4a2a East Long. tolerance limit [0.05]	A4a2b West Long. tolerance limit [0.05]								
A11a Start time UTC [0]	A11b Stop time UTC [24]									
A6 Agreements [ ]										
A30#4.2.3C [O USA]	A30A#4.2.2C [O USA]									
<input type="checkbox"/> B1a Beam designation [UPSV]	B1b Steerable [ ]	B2 Emi-Rcp [R]	B3a1 Max. co-polar gain [33.3]	B3a2 Max. cross-polar gain [4]						
B3b1 Co-polar ant. gain contours diag. [ ]	B3b2 Cross-polar ant. gain contours diag. [ ]	B3e Ant. gain vs orbit long. diag. [ ]	B3f1 Boresight or aim point [90 W] [30 N]							
<input type="checkbox"/> BR7a Group id. [11406]	BR1 Date of receipt [11.04.2013]	2D Date of protection [15.04.2005]								
A3a Op. agency [185]	A3b Adm. resp. [A]	C15a Exclusive op. group [97]								
BR62 Expiry date for bringing into use [15.04.2013]										
BR65 Date of receipt of Part A submission [15.04.2005]	BR66 Date of entry into Plan/List of an allotment/assignment [03.09.2013]									
BR68 Date of receipt of launch failure [ ]										
C4a Class of station [EC]	C3a Assigned freq. band [24000]									
C6a Polarization type [CR]	C6b Polarization angle [ ]									
C11a1 Service area no. [1]	C11a4 Service area name [USA, BER]				C11a5e Min. elev. angle [ ]	C11a3 Service area diagram [1]				
C11a5a Test points [ ]										
C11a5b Longitude [-78.67]	C11a5c Latitude [38.72]	C11a5d Altitude [0]	C11a5e Rain zone [K]							
Associated typical earth station antenna characteristics										
C10d3 Max. iso. gain [64.33]	C10d4 Bmwthd [0.11]	C10d5a1a Co-polar ref. pattern [R2TES]	C10d5b1a Cross-polar ref. pattern [R2TES]	C10d7 Ant. diameter [11.1]						
C2a1 Assigned frequency / C2a2 Channel number										
17.324 GHz [1]	17.41148 GHz [7]	17.49896 GHz [13]	17.58644 GHz [19]	17.67392 GHz [25]	17.7614 GHz [31]					
17.35316 GHz [3]	17.44064 GHz [9]	17.52812 GHz [15]	17.6156 GHz [21]	17.70308 GHz [27]						
17.38232 GHz [5]	17.4698 GHz [11]	17.55728 GHz [17]	17.64476 GHz [23]	17.73224 GHz [29]						
C7a Design. of emission [24M0G7W--]	C8b1 Max. peak pwr [15]	Maximum Power density per Hz over ...				C8i Power control				
		C8b2 1 MHz [-58.8]	C8h Necessary bandwidth [-58.8]							
A12 Range of automatic gain control [15]										
<input type="checkbox"/> BR7a Group id. [11407]	BR1 Date of receipt [11.04.2013]	2D Date of protection [15.04.2005]								
A3a Op. agency [185]	A3b Adm. resp. [A]	C15a Exclusive op. group [97]								

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<input checked="" type="checkbox"/> A1a Sat. Network	BERMUDASAT-1			A1f1 Notifying adm.	<input checked="" type="checkbox"/>	A1f3 Inter. sat. org.	<input type="checkbox"/>	BR1 Date of receipt	11.04.2013			BR20/BR21 BR IFIC no./part	2752/																
BR6a/BR6b Id. no.	105555002			BR3a/BR3b Provision reference	4.2.16			BR2 Adm. serial no.				UPSV	R																
BR62 Expiry date for bringing into use	15.04.2013			BR64 Date of receipt of 1st Res49	11.04.2013																								
BR65 Date of receipt of Part A submission	15.04.2005			BR66 Date of entry into Plan/List of an allotment/assignment	03.09.2013																								
BR68 Date of receipt of launch failure																													
C4a Class of station	<input checked="" type="checkbox"/> EC	<input type="checkbox"/>	<input type="checkbox"/>	C3a Assigned freq. band	24000			C5a Noise temperature	600																				
C6a Polarization type	<input checked="" type="checkbox"/> CL	<input type="checkbox"/>	<input type="checkbox"/>	C6b Polarization angle																									
C11a1 Service area no.	1			C11a4 Service area name	USA, BER			C11a5e Min. elev. angle				C11a3 Service area diagram	1																
C11a5a Test points are identical to group id.					11406																								
Associated typical earth station antenna characteristics are identical to group id.					11406																								
C2a1 Assigned frequency / C2a2 Channel number																													
17.33858 GHz	2	17.42606 GHz	8	17.51354 GHz	14	17.60102 GHz	20	17.6885 GHz	26	17.77598 GHz	32																		
17.36774 GHz	4	17.45522 GHz	10	17.5427 GHz	16	17.63018 GHz	22	17.71766 GHz	28																				
17.3969 GHz	6	17.48438 GHz	12	17.57186 GHz	18	17.65934 GHz	24	17.74682 GHz	30																				
C7a/C8 Designations of emissions and power characteristics are identical to group id.												11406																	
A12 Range of automatic gain control												15																	
<input type="checkbox"/> B1a Beam designation	TXCL			<input type="checkbox"/> B1b Steerable	<input type="checkbox"/>			B2 Emi-Rcp	<input checked="" type="checkbox"/> E	B3a1 Max. co-polar gain	29.7			B3a2 Max. cross-polar gain	0														
B3b1 Co-polar ant. gain contours diag.				B3b2 Cross-polar ant. gain contours diag.				B3f1 Boresight or aim point	80.65 W			26.84 N																	
<input type="checkbox"/> BR7a Group id.	11402			BR1 Date of receipt	11.04.2013			2D Date of protection	15.04.2005			A3a Op. agency	185			A3b Adm. resp.	<input checked="" type="checkbox"/> A	C15a Exclusive op. group	97			BR64 Date of receipt of 1st Res49	11.04.2013						
BR62 Expiry date for bringing into use	15.04.2013			BR65 Date of receipt of Part A submission	15.04.2005			BR66 Date of entry into Plan/List of an allotment/assignment	03.09.2013																				
BR68 Date of receipt of launch failure																													
C4a Class of station	<input checked="" type="checkbox"/> EV	<input type="checkbox"/>	<input type="checkbox"/>	C3a Assigned freq. band	24000																								
C6a Polarization type	<input checked="" type="checkbox"/> CL	<input type="checkbox"/>	<input type="checkbox"/>	C6b Polarization angle																									
C11a1 Service area no.	1			C11a4 Service area name	USA, ALS, HWA, BER			C11a5e Min. elev. angle								C11a3 Service area diagram	1												
C11a5a Test points																													
C11a5b Longitude	-158.21	-122.3	-122.15	-120.32	-117.17	-115.26	-112.02	-108.59	-98.89	-95.35																			
C11a5c Latitude	21.51	47.45	38.02	34.79	32.73	48.89	34.43	41.36	26.71	29.97																			
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0																			
BR49 Rain zone	D	D	D	E	E	B	E	E	E	M																			
C11a5a Test points																													
C11a5b Longitude	-95.23	-90.28	-83.6	-82.63	-80.27	-78	-75.2	-73.78	-67.55	-64.75																			
C11a5c Latitude	48.57	38.12	41.89	33.39	25.8	38.88	44.59	40.78	45.02	32.3																			
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0																			
BR49 Rain zone	K	K	K	M	N	K	K	K	K	F																			
Associated typical earth station antenna characteristics																													
C10d3 Max. iso. gain	C10d4 Bmwth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d8 Eqv. ant. diameter																									
33.3	3.51	DBLTVR0I0001	DBLTVR0I0001	0.45																									

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<input type="checkbox"/> A1a Sat. Network	BERMUDASAT-1			A1f1 Notifying adm.	<input checked="" type="checkbox"/> G	A1f3 Inter. sat. org.			BR1 Date of receipt	11.04.2013		BR20/BR21 BR IFIC no./part	2752/	
BR6a/BR6b Id. no.	105555002			BR3a/BR3b Provision reference	4.2.16		B	BR2 Adm. serial no.			TXCL	E		
C2a1 Assigned frequency / C2a2 Channel number														
12.23858 GHz	2	12.32606 GHz	8	12.41354 GHz	14	12.50102 GHz	20	12.5885 GHz	26	12.67598 GHz	32			
12.26774 GHz	4	12.35522 GHz	10	12.4427 GHz	16	12.53018 GHz	22	12.61766 GHz	28					
12.2969 GHz	6	12.38438 GHz	12	12.47186 GHz	18	12.55934 GHz	24	12.64682 GHz	30					
C7a Design. of emission		C8b1 Max. peak pwr	Maximum Power density per Hz over ...											
24M0G7W--		21	C8b2 4 kHz			C8h Necessary bandwidth			-52.8					
BR7a Group id. 11403														
BR1 Date of receipt	11.04.2013		2D Date of protection	15.04.2005		A3a Op. agency	185		A3b Adm. resp.	A		C15a Exclusive op. group	97	
BR62 Expiry date for bringing into use	15.04.2013		BR64 Date of receipt of 1st Res49	11.04.2013										
BR65 Date of receipt of Part A submission	15.04.2005		BR66 Date of entry into Plan/List of an allotment/assignment	03.09.2013										
BR68 Date of receipt of launch failure														
C4a Class of station	EV		C3a Assigned freq. band	24000		C6a Polarization type	CL		C11a1 Service area no.	1		C11a4 Service area name	USA, ALS, HWA, BER	
C11a5a Test points are identical to group id.				11402		C11a5e Min. elev. angle			C11a3 Service area diagram	1				
Associated typical earth station antenna characteristics														
C10d3 Max. iso. gain	C10d4 Bmwth	C10d5a1a Co-polar ref. pattern	C10d5b1a Cross-polar ref. pattern	C10d8 Eqv. ant. diameter										
35.8	2.63	DBLTVOI0001	DBLTVOI0001	0.6										
C2a1 Assigned frequencies are identical to group id.			11402											
C7a/C8 Designations of emissions and power characteristics are identical to group id.			11402											
<input type="checkbox"/> B1a Beam designation	TXCR	B1b Steerable	<input type="checkbox"/>	B2 Emi-Rcp	<input checked="" type="checkbox"/> E	B3a1 Max. co-polar gain	29.3		B3a2 Max. cross-polar gain	0		B3f1 Boresight or aim point	80.65 W	26.84 N
B3b1 Co-polar ant. gain contours diag.		B3b2 Cross-polar ant. gain contours diag.												
BR7a Group id. 11404														
BR1 Date of receipt	11.04.2013		2D Date of protection	15.04.2005		A3a Op. agency	185		A3b Adm. resp.	A		C15a Exclusive op. group	97	
BR62 Expiry date for bringing into use	15.04.2013		BR64 Date of receipt of 1st Res49	11.04.2013										
BR65 Date of receipt of Part A submission	15.04.2005		BR66 Date of entry into Plan/List of an allotment/assignment	03.09.2013										
BR68 Date of receipt of launch failure														
C4a Class of station	EV		C3a Assigned freq. band	24000		C6a Polarization type	CR		C11a1 Service area no.	1		C11a4 Service area name	USA, ALS, HWA, BER	
C11a5a Test points														
C11a5b Longitude	-158.21	-122.3	-122.15	-120.32	-117.17	-115.26	-112.02	-108.59	-98.89	-95.35				
C11a5c Latitude	21.51	47.45	38.02	34.79	32.73	48.89	34.43	41.36	26.71	29.97				
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0				
BR49 Rain zone	D	D	D	E	E	B	E	E	M	M				



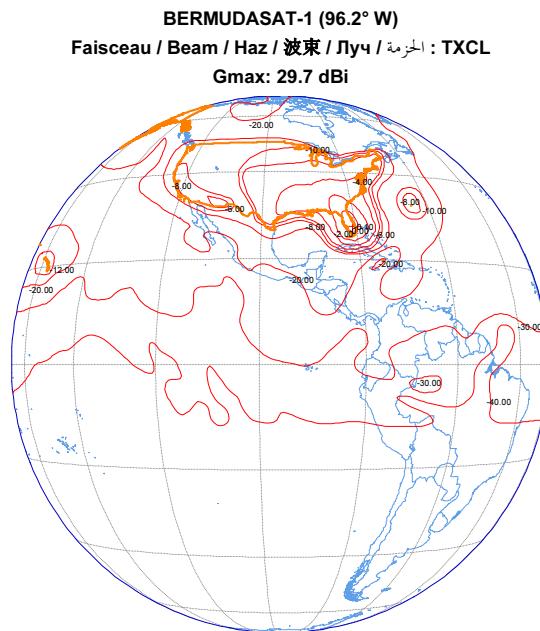
SECTION SPECIALE / SPECIAL SECTION / SECCIÓN ESPECIAL / 特节 / СПЕЦИАЛЬНАЯ СЕКЦИЯ / النسخة الخاصة												AP30-30A/E/389			
A	A1a Sat. Network [BERMUDASAT-1]			A1f1 Notifying adm. [G]	A1f3 Inter. sat. org. [ ]	BR1 Date of receipt [11.04.2013]	BR20/BR21 BR IFIC no./part [2752/]								
BR6a/BR6b	Id. no.	105555002		BR3a/BR3b Provision reference [4.2.16]	B	BR2 Adm. serial no. [ ]	TXCR [E]								
C11a5a Test points															
C11a5b Longitude	-95.23	-90.28	-83.6	-82.63	-80.27	-78	-75.2	-73.78	-67.55	-64.75					
C11a5c Latitude	48.57	38.12	41.89	33.39	25.8	38.88	44.59	40.78	45.02	32.3					
C11a5d Altitude	0	0	0	0	0	0	0	0	0	0					
BR49 Rain zone	K	K	K	M	N	K	K	K	K	F					
Associated typical earth station antenna characteristics															
C10d3 Max. iso. gain	33.3	C10d4 Bmwth	3.51	C10d5a1a Co-polar ref. pattern	DBLTVR010001	C10d5b1a Cross-polar ref. pattern	DBLTVR010001	C10d8 Eqv. ant. diameter	0.45						
C2a1 Assigned frequency / C2a2 Channel number															
12.224 GHz	1	12.31148 GHz	7	12.39896 GHz	13	12.48644 GHz	19	12.57392 GHz	25	12.6614 GHz	31				
12.25316 GHz	3	12.34064 GHz	9	12.42812 GHz	15	12.5156 GHz	21	12.60308 GHz	27						
12.28232 GHz	5	12.3698 GHz	11	12.45728 GHz	17	12.54476 GHz	23	12.63224 GHz	29						
C7a Design. of emission		C8b1 Max. peak pwr		Maximum Power density per Hz over ...											
24M0G7W--		21		-52.8								-52.8			
BR7a Group id. [11405] BR1 Date of receipt [11.04.2013] 2D Date of protection [15.04.2005]															
A3a Op. agency [185] A3b Adm. resp. [A] C15a Exclusive op. group [97] BR64 Date of receipt of 1st Res49 [11.04.2013]															
BR62 Expiry date for bringing into use [15.04.2013] BR65 Date of receipt of Part A submission [15.04.2005] BR66 Date of entry into Plan/List of an allotment/assignment [03.09.2013]															
BR68 Date of receipt of launch failure [ ]															
C4a Class of station	EV	C3a Assigned freq. band		24000											
C6a Polarization type	CR	C6b Polarization angle													
C11a1 Service area no.	1	C11a4 Service area name [USA, ALS, HWA, BER]		C11a5e Min. elev. angle [ ]		C11a3 Service area diagram [1]									
C11a5a Test points are identical to group id.															
Associated typical earth station antenna characteristics															
C10d3 Max. iso. gain	35.8	C10d4 Bmwth	2.63	C10d5a1a Co-polar ref. pattern	DBLTVR010001	C10d5b1a Cross-polar ref. pattern	DBLTVR010001	C10d8 Eqv. ant. diameter	0.6						
C2a1 Assigned frequencies are identical to group id. [11404]															
C7a/C8 Designations of emissions and power characteristics are identical to group id. [11404]															

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A	A1a Sat. Network BERMUDASAT-1	A1f1 Notifying adm. G	A1f3 Inter. sat. org.		BR1 Date of receipt 11.04.2013	BR20/BR21 BR IFIC no./part 2752/		
BR6a/BR6b	Id. no. 105555002	BR3a/BR3b Provision reference 4.2.16	B	BR2 Adm. serial no.			TXCR	E
<hr/>								
<b>C9 Modulation characteristics</b>		<b>C7a Designation of emission 24M0G7W--</b>						
C9a1	Type of modulation	QPSK						
C9a3a	Freq. deviation of the pre-emphasized signal							
C9a3b	Pre-emphasis characteristics							
C9a3c	Type of multiplexing	DVB-S						
C9a6a	Peak-to-peak freq. dev.							
C9a6b	Sweep frequency							
C9a6c	Energy dispersal waveform							
C9a7	Type of energy dispersal	Carrier always spread by digital stream						
C9a9	TV standard	Digital						
C9b1	Sound-broadcasting							
C9b2	Baseband							
BR7a	Group id.	11402, 11403, 11404, 11405, 11406, 11407						

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A	A1a Sat. Network [BERMUDASAT-1]	A1f1 Notifying adm. [G]	A1f3 Inter. sat. org. [ ]	BR1 Date of receipt [11.04.2013]	BR20/BR21 BR IFIC no./part [2752/]		
	BR6a/BR6b Id. no. [105555002]	BR3a/BR3b Provision reference [4.2.16]	B	BR2 Adm. serial no. [ ]		TXCR	E
D1a1 Beam designation	D1a2 Downlink	BR7a Group id.	D1a3 Assigned frequency	D1a4 Downlink	D1a3 Channel	D1a4 Downlink	
Feeder-link UPSV	Downlink TXCL	Connexion de chaque canal de la liaison descendante au même canal de la liaison de connexion Connection of each downlink channel to the same feeder link channel Conexión de cada canal del enlace descendente al mismo canal del enlace de conexión 每一下行链路信道与相同馈线链路信道的连接 Соединение каждого нисходящего канала связи с таким же каналом фидерной линии توصيل كل قناة لوصلة المابطة إلى نفس القناة لوصلة التغذية	Feeder-link Downlink	Downlink	Feeder-link Downlink	Downlink	
Feeder-link UPSV	Downlink TXCR	Connexion de chaque canal de la liaison descendante au même canal de la liaison de connexion Connection of each downlink channel to the same feeder link channel Conexión de cada canal del enlace descendente al mismo canal del enlace de conexión 每一下行链路信道与相同馈线链路信道的连接 Соединение каждого нисходящего канала связи с таким же каналом фидерной линии توصيل كل قناة لوصلة المابطة إلى نفس القناة لوصلة التغذية	Feeder-link Downlink	Downlink	Feeder-link Downlink	Downlink	

Figure / Figura / 图 / Рисунок / 1 الشكل

ZONE DE SERVICE ET CONTOURS (COPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE  
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CO-POLAR) AND SERVICE AREA  
ZONA DE SERVICIO Y CONTORNOS (COPOLARES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL  
空间台站发射天线增益等值线(同极)和业务区  
ЗОНА ОБСЛУЖИВАНИЯ И (КОПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ  
منطقة الخدمة وأكفة الكسب (متحدد الاستقطاب) فوافي الإرسال للمحطة الفضائية



Zone de service / Service area / Zona de servicio / 业务区 / Зона обслуживания / : منطقة الخدمة : USA, ALS, HWA, BER (No. 01)

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ZONE DE SERVICE ET CONTOURS (COPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE

SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CO-POLAR) AND SERVICE AREA

ZONA DE SERVICIO Y CONTORNOS (COPOLARES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL

空间台站发射天线增益等值线(同极)和业务区

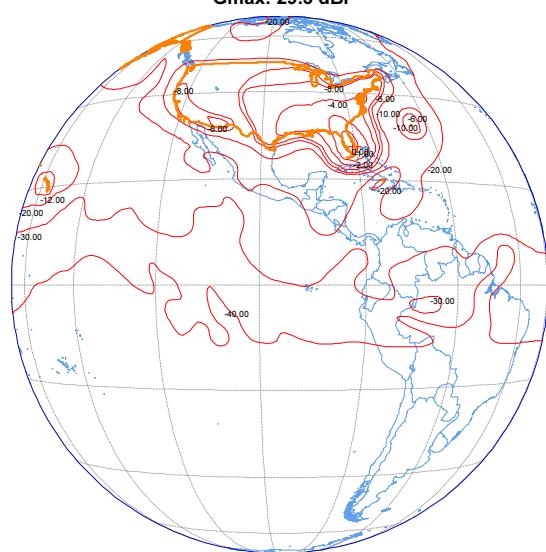
ЗОНА ОБСЛУЖИВАНИЯ И (КОПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ

منطقة الخدمة وأكفة الكسب (متحدة الاستقطاب) خوائي الإرسال للمحطة الفضائية

BERMUDASAT-1 (96.2° W)

Faisceau / Beam / Haz / 波束 / Луч / الخزنة : TXCR

Gmax: 29.3 dBi



Zone de service / Service area / Zona de servicio / 业务区 / Зона обслуживания / : منطقة الخدمة : USA, ALS, HWA, BER (No. 01)

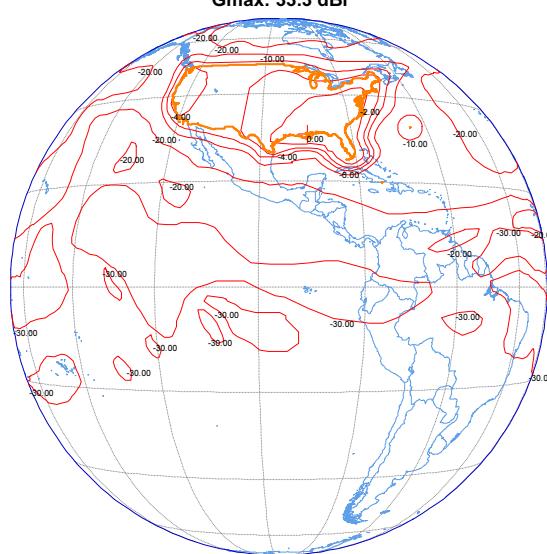
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Figure / Figura / 图 / Рисунок / 3 الشكل

ZONE DE SERVICE ET CONTOURS (COPOLAIRES) DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE  
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS (CO-POLAR) AND SERVICE AREA  
ZONA DE SERVICIO Y CONTORNOS (COPOLARES) DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL  
空间台站接收天线增益等值线(同极)和业务区  
ЗОНА ОБСЛУЖИВАНИЯ И (КОПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ  
منطقة الخدمة وأكثف الكسب (متحدد الاستقطاب) هوائي الاستقبال للمحطة الفضائية

BERMUDASAT-1 (96.2° W)  
Faisceau / Beam / Haz / 波束 / Луч / الخزعة : UPSV  
Gmax: 33.3 dBi



Zone de service / Service area / Zona de servicio / 业务区 / Зона обслуживания : منطقة الخدمة / USA, BER (No. 01)

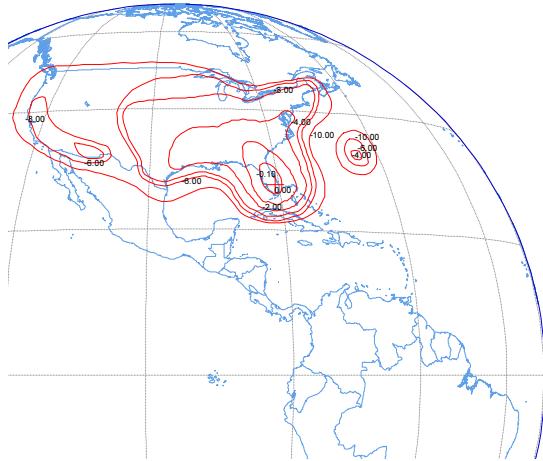
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CONTOURS (CONTRAPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE  
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CROSS-POLAR)  
CONTORNOS (CONTRAPOLAIRES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL  
空间台站发射天线增益等值线(交叉极)  
(КРОССПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ  
أَكْفَافُ الْكَسْبِ (مَقْطَعَةُ الْاسْتِقْطَابِ) طَوَافٍ لِلْإِرْسَالِ لِلْمَحَطةِ الْفَضَّلِيَّةِ

BERMUDASAT-1 (96.2° W)  
Faisceau / Beam / Haz / 波束 / Луч : الخزعة / TXCL  
Gmax: 0 dBi



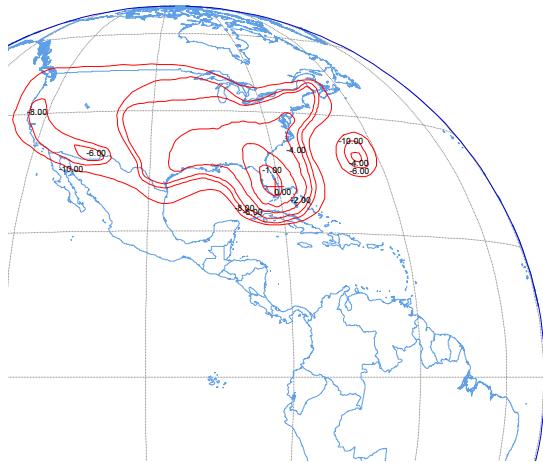
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Figure / Figura / 图 / Рисунок / 5 الشكل

CONTOURS (CONTRAPOLAIRES) DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE  
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS (CROSS-POLAR)  
CONTORNOS (CONTRAPOLAIRES) DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL  
空间台站发射天线增益等值线(交叉极)  
(КРОССПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ  
أَكْفَافُ الْكَسْبِ (مَقْطَعَةُ الْاسْتِقْطَابِ) طَوَافٍ لِلْإِرْسَالِ لِلْمَحَطةِ الْفَضَّلِيَّةِ

**BERMUDASAT-1 (96.2° W)**  
Faisceau / Beam / Haz / 波束 / Луч / الخزنة : TXCR  
Gmax: 0 dBi



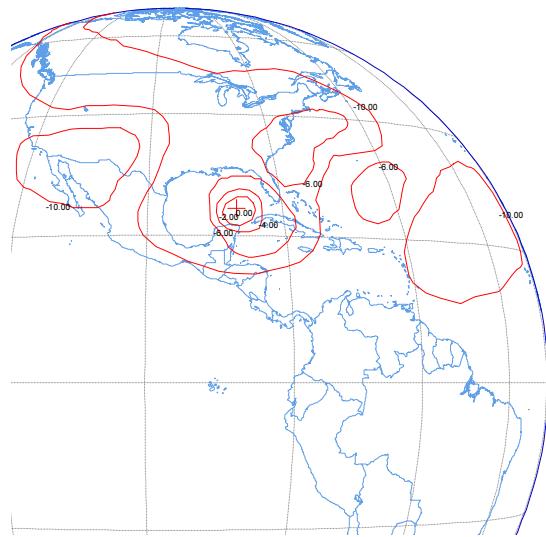
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Figure / Figura / 图 / Рисунок / 6 الشكل

CONTOURS (CONTRAPOLAIRES) DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE  
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS (CROSS-POLAR)  
CONTORNOS (CONTRAPOLARES) DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL  
空间台站接收天线增益等值线(交叉极)  
(КРОССПОЛЯРНЫЕ) КОНТУРЫ УСИЛЕНИЯ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ  
أكفة الكسب (مترقبة الاستقطاب) لطرازي الاستقبال للمحطة الفضائية

BERMUDASAT-1 (96.2° W)  
Faisceau / Beam / Haz / 波束 / Луч : UPSV  
Gmax: 4 dBi



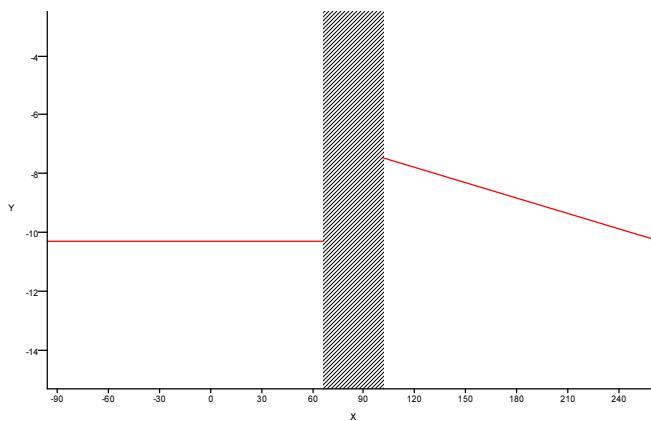
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Figure / Figura / 図 / Рисунок / 7 الشكل

GAIN ESTIME DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORBITE DES SATELLITES GEOSTATIONNAIRES  
 ESTIMATED GAIN OF THE SPACE STATION TRANSMITTING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT  
 GANANCIA ESTIMADA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA DE LOS SATELITES GEOESTACIONARIOS  
 对地静止卫星轨道方向的空间台站发射天线估算增益  
 РАСЧЕТНОЕ УСИЛЕНИЕ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ В НАПРАВЛЕНИИ ОРБИТЫ ГЕОСТАЦИОНАРНЫХ СПУТНИКОВ  
 الكسب المقدر طوائى الإرسال للمحطة الفضائية في اتجاه مدار السواتل المستقرة بالنسبة إلى الأرض

**BERMUDASAT-1 (96.2° W)**  
**Faisceau / Beam / Haz / 波束 / Луч : الخزعة / TXCL**



X =	Longitude (degrees)	Longitude (degrés)	Longitud (grados)	经度 (度)	Долгота (в градусах)	خط الطول (بالدرجات)
Y =	Gain (dBi)	Gain (dBi)	Ganancia (dBi)	增益 (dB)	Усиление (дБ)	الكسب (dBi)
	Obstructed Zone	Zone occultée	Zona Oculta	受阻区	Закрытая зона	منطقة محجوبة

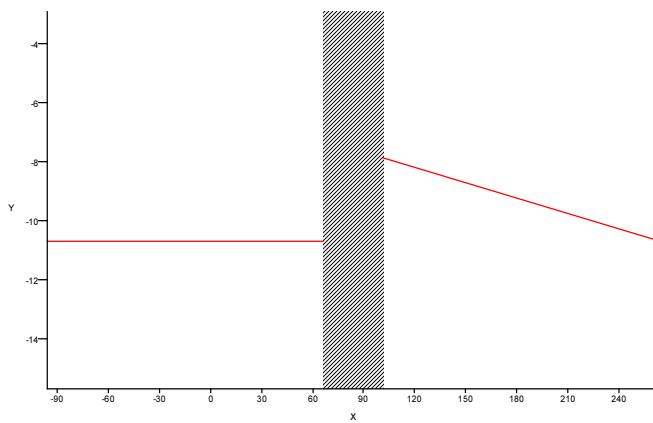
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Figure / Figura / 図 / Рисунок / 8 الشكل

GAIN ESTIME DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORBITE DES SATELLITES GEOSTATIONNAIRES  
 ESTIMATED GAIN OF THE SPACE STATION TRANSMITTING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT  
 GANANCIA ESTIMADA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA DE LOS SATELITES GEOESTACIONARIOS  
 对地静止卫星轨道方向的空间台站发射天线估算增益  
 РАСЧЕТНОЕ УСИЛЕНИЕ ПЕРЕДАЮЩЕЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ В НАПРАВЛЕНИИ ОРБИТЫ ГЕОСТАЦИОНАРНЫХ СПУТНИКОВ  
 الكسب المقدر طوائى الإرسال للمحطة الفضائية في اتجاه مدار السواتل المستقرة بالنسبة إلى الأرض

**BERMUDASAT-1 (96.2° W)**  
**Faisceau / Beam / Haz / 波束 / Луч / الخزنة : TXCR**



X =	Longitude (degrees)	Longitude (degrés)	Longitud (grados)	经度 (度)	Долгота (в градусах)	خط الطول (بالدرجات)
Y =	Gain (dBi)	Gain (dBi)	Ganancia (dBi)	增益 (dB)	Усиление (дБ)	الكسب (dBi)
	Obstructed Zone	Zone Occultée	Zona Oculta	受阻区	Закрытая зона	منطقة محجوبة

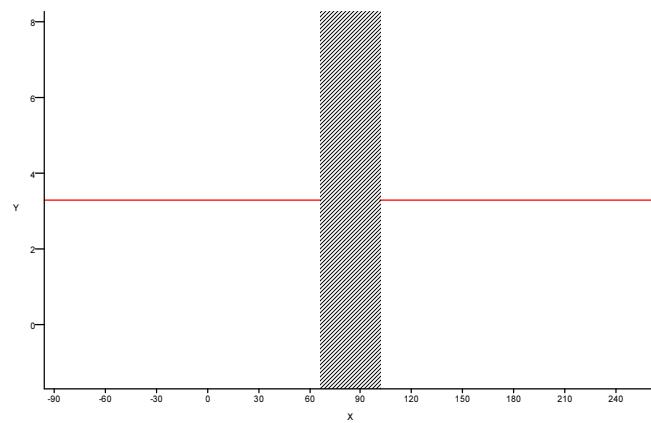
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Figure / Figura / 图 / Рисунок / 9 الشكل

GAIN ESTIME DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORBITE DES SATELLITES GEOSTATIONNAIRES  
 ESTIMATED GAIN OF THE SPACE STATION RECEIVING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT  
 GANANCIA ESTIMADA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA DE LOS SATELITES GEOESTACIONARIOS  
 对地静止卫星轨道方向的空间台站接收天线估算增益  
 РАСЧЕТНОЕ УСИЛЕНИЕ ПРИЕМНОЙ АНТЕННЫ КОСМИЧЕСКОЙ СТАНЦИИ В НАПРАВЛЕНИИ ОРБИТЫ ГЕОСТАЦИОНАРНЫХ СПУТНИКОВ  
 الكسب المقدر لموائي الاستقبال للمحطة الفضائية في اتجاه مدار السواتل المستقرة بالنسبة إلى الأرض

**BERMUDASAT-1 (96.2° W)**  
**Faisceau / Beam / Haz / 波束 / Луч / UPSV**



X =	Longitude (degrees)	Longitude (degrés)	Longitud (grados)	经度 (度)	Долгота (в градусах)	خط الطول (بالدرجات)
Y =	Gain (dBi)	Gain (dBi)	Ganancia (dBi)	增益 (dB)	Усиление (дБ)	الكسب (dBi)
	Obstructed Zone	Zone occultée	Zona Oculta	受阻区	Закрытая зона	منطقة محظوظة

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### **Notes du Bureau des radiocommunications**

1. Suite à la demande qu'il a reçue au titre du § 4.2.16 de l'Article 4 des Appendices **30 et 30A** du Règlement des radiocommunications, le Bureau des radiocommunications publie la présente Section spéciale conformément au § 4.2.19 de l'Article 4 des Appendices **30 et 30A**.
2. Les assignations de fréquence au réseau à satellite considéré soumises au titre du § 4.2.6 des Appendices **30 et 30A** ont été publiées dans les Sections spéciales suivantes:
  - AP30-30A/E/389 annexée à la BR IFIC N°2553 du 20.09.2005
  - AP30-30A/E/392 (Partie D) annexée à la BR IFIC N°2565 du 21.03.2006
3. En application des critères mentionnés dans l'Annexe 1 des Appendices **30 et 30A**, et compte tenu des caractéristiques définitives et des accords avec une ou plusieurs autres administrations communiqués par l'administration notificatrice tels qu'elles sont publiées dans la présente Section spéciale, le Bureau a examiné la liste des administrations auprès desquelles un accord doit être obtenu pour mener à bien la procédure de l'Article 4 concernant le réseau considéré. Il ressort de cet examen qu'aucun service d'une administration quelconque qui a fait part d'un désaccord valable conformément au § 4.2.10, 4.2.13 ou 4.2.14 de l'Article 4 des Appendices **30 et 30A** et dont l'accord n'a pas été obtenu au titre du § 4.2.16, n'est identifié comme étant affecté. De plus, à la suite des modifications apportées aux données initiales, il n'y a pas de nouvelle administration dont les services sont considérés comme étant affectés.
4. Compte tenu de ce qui précède, le Bureau, conformément au § 4.2.19 des Appendices **30 et 30A**, conclut que la procédure de l'Article 4 pour le réseau à satellite considéré a été menée à bien. Les assignations en question sont donc incluses dans le Plan et la situation de référence du Plan ainsi que des autres fiches de notification soumises au titre de l'Article 4, qui en sont toujours au stade de l'application de cet Article, ont été mises à jour en conséquence.

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## **Radiocommunication Bureau Notes**

1. Based on the request received by the Radiocommunication Bureau under § 4.2.16 of Article 4 of Appendices **30** and **30A** to the Radio Regulations, this Special Section is published in accordance with § 4.2.19 of Article 4 of Appendices **30** and **30A**.

2. The frequency assignments of the subject satellite network submitted under § 4.2.6 of Appendices **30** and **30A** were published in the following Special Sections:

- AP30-30A/E/389 annexed to BR IFIC No. 2553 of 20.09.2005
- AP30-30A/E/389 (Part D) annexed to BR IFIC No. 2565 of 21.03.2006

3. In application of the criteria of Annex 1 to Appendices **30** and **30A**, taking into account the final characteristics and the agreement(s) with other administration(s) provided by the notifying Administration as published in this Special Section, the Bureau has reviewed the list of administrations whose agreements are required for completion of the Article 4 procedure for the subject network. The results of these examinations indicate that no services of any administration that communicated a valid disagreement in accordance with § 4.2.10, 4.2.13 or 4.2.14 of Article 4 of Appendices **30** and **30A** and whose agreement was not reached under § 4.2.16, are identified as affected. In addition, there is no administration whose services are newly identified as affected as a result of these modifications to the initial submission.

4. In view of the above, the Bureau, pursuant to § 4.2.19 of Appendices **30** and **30A**, concludes that the Article 4 procedure for the subject satellite network has been successfully completed. The subject assignments are therefore included in the Plan and the Reference Situation of the Plan and of other Article 4 submissions, which are still at the stage of application of that Article, have been updated accordingly.

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### **Notas de la Oficina de Radiocomunicaciones**

1. Basándose en la petición recibida por la Oficina de Radiocomunicaciones con arreglo al § 4.2.16 del Artículo 4 de los Apéndices **30 y 30A** al Reglamento de Radiocomunicaciones, se publica esta Sección Especial de conformidad con el § 4.2.19 del Artículo 4 de los Apéndices **30 y 30A**.

2. Las asignaciones de frecuencias de la red de satélite en cuestión presentada con arreglo al § 4.2.6 de los Apéndices **30 y 30A** se publicaron en las siguientes Secciones Especiales:

- AP30-30A/E/389 adjunta a la BR IFIC N.º 2553 del 20.09.2005
- AP30-30A/E/389 (Parte D) adjunta a la BR IFIC N.º 2565 del 21.03.2006

3. En aplicación de los criterios del Anexo 1 de los Apéndices **30 y 30A**, teniendo en cuenta las características definitivas y los acuerdos con otras administraciones proporcionadas por la Administración notificante como se publica en esta Sección Especial, la Oficina ha examinado la lista de administraciones cuyos acuerdos son necesarios para completar el procedimiento del Artículo 4 aplicado a la red en cuestión. Los resultados de estos exámenes indican que no se ha identificado como afectado ningún servicio de toda administración que ha comunicado un desacuerdo válido de conformidad con los § 4.2.10, 4.2.13 ó 4.2.14 del Artículo 4 de los Apéndices **30 y 30A** y cuyo acuerdo no se alcanzó con arreglo al punto 4.2.16. Además, no existe ninguna administración cuyos servicios se hayan identificado como afectados a consecuencia de estas modificaciones introducidas en las presentaciones iniciales.

4. Teniendo en cuenta lo anterior, la Oficina, en virtud del § 4.2.19 de los Apéndices **30 y 30A**, ha llegado a la conclusión de que el procedimiento del Artículo 4 para la red de satélite en cuestión se ha completado con éxito. Por lo tanto, las asignaciones correspondientes se incluyen en el Plan y se ha actualizado en consecuencia la situación de referencia del Plan y de otras aplicaciones con arreglo al Artículo 4, que aun se encuentran en la etapa de aplicación de dicho Artículo.

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### **无线电通信局的注释**

1. 无线电通信局在收到根据无线电规则附录 **30** 和 **30A** 第 **4** 条第 **4.2.16** 段提出的协调要求后，根据附录 **30** 和 **30A** 第 **4** 条第 **4.2.19** 段公布本特节。
2. 根据附录 **30** 和 **30A** 第 **4.2.6** 段提交的所述卫星网络的频率指配公布在下列特节中：
  - 2005年09月20日无线电通信局国际频率信息通报第2553期附件AP30-30A/E/389
  - 2006年03月21日无线电通信局国际频率信息通报第2565期附件AP30-30A/E/389 (D部分)
3. 在应用附录 **30** 和 **30A** 附件 **1** 的标准时，考虑到通知主管部门提交的在本特节中公布的最终特和与其它主管部门达成的协议，无线电通信局审议了对所述网络为完成第 **4** 条规定的程序而要求与之达成协议的主管部门清单。这些审查的结果表明，根据附录 **30** 和 **30A** 第 **4** 条第 **4.2.10**、**4.2.13** 或 **4.2.14** 段已明确表示异议的并且按照第 **4.2.16** 段未能达成协议的任何主管部门的任何服务不算做受到影响。修订版) 在对最初提交的资料进行修改后，没有主管部门的业务又被确定为受到影响。
4. 据上所述，无线电通信局根据附录 **30A** 第 **4.2.19** 段得出结论，所述卫星网络成功地完成了附录 **30** 和 **30A** 第 **4** 条的程序。因此，所述指配已列入规划。对 **1** 区和 **3** 区规划和列表以及其它根据第 **4** 条提交的仍处于第 **4** 条应用阶段的资料的参考情况也作了相应的更新。

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### **Примечания Бюро радиосвязи**

1. Настоящая Специальная секция публикуется в соответствии с п. 4.2.19 Статьи 4 Приложений **30 и 30A** Регламента радиосвязи на основе запросов, полученных Бюро радиосвязи согласно п. 4.2.16 Статьи 4 Приложений **30 и 30A**.
2. Частотные присвоения данной спутниковой сети, представляемые согласно п. 4.2.6 Приложений **30 и 30A**, опубликованы в следующих Специальных секциях:
  - AP30-30A/E/389, включенной в качестве приложения в ИФИК БР № 2553 от 20.09.2005
  - AP30-30A/E/389 (Часть D), включенной в качестве приложения в ИФИК БР № 2565 от 21.03.2006
3. При применении изложенного в Дополнении 1 к Приложению 30 и 30A критерия и принимая во внимание окончательные характеристики (и соглашение(я) с другой(ими) администрацией(ями)), представленные заявляющей администрацией и опубликованные в настоящей Специальной секции, Бюро рассмотрело список администраций, согласие которых требуется для выполнения предусмотренной в статье 4 процедуры касательно данной сети. Результаты этих экспертиз указывают на то, что в качестве затрагиваемой не определена ни одна из служб какой-либо администрации, сообщившей об обоснованном несогласии в соответствии с п. 4.2.10, 4.2.13 или 4.2.14 статьи 4 Приложения 30 и 30A, согласия которой в соответствии с п. 4.2.16 не удалось достичь. Кроме того, нет администраций, службы которых вновь определены как затрагиваемые в результате этих изменений к первоначальному представлению.
4. С учетом изложенного выше, Бюро во исполнение п. 4.2.19 Приложений **30 и 30A** делает заключение, что процедура Статьи 4 для данной сети успешно завершена. В связи с этим данные присвоения включены в План, и эталонная ситуация Плана и других представлений по Статье 4, которые еще находятся на стадии применения этой статьи, была соответственно обновлена.

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## ملاحظات مكتب الاتصالات الراديوية

١. بناء على الطلب الذي استلمه مكتب الاتصالات الراديوية، بموجب الفقرة 16.2.4 من المادة 4 في التدبيلين 30 و30A من لوائح الراديو، فإنه ينشر هذا القسم الخاص طبقاً للفقرة 19.2.4 من المادة 4 في التدبيلين 30 و30A.
٢. الترددات المخصصة للشبكة الساتلية المعنية المقدمة بموجب الفقرتين السابعتين 5.3.4 و 5.2.4 من التدبيلين 30 و30A قد نشرت في من الأقسام الخاصة التالية:
  - الـقسم الخاص AP30-30A/E/389 الملحق بالنشرة الإعلامية الدولية للترددات رقم 2553 وتاريخ 2005.09.20
  - الـقسم الخاص (الجزء D) AP30-30A/E/389 الملحق بالنشرة الإعلامية الدولية للترددات رقم 2565 وتاريخ 2006.03.21
٣. تطبيقاً للمعايير المذكورة في الملحق 1 بالتدبيل 30 ، ومراجعة للخصائص النهائية التي أرسلتها الإداراة المبلغة والاتفاق (الاتفاقات) مع إدارة (إدارات) آخر وفقاً لما هو منشور في هذا القسم الخاص، تفحص المكتب قائمة الإدارات المطلوب موافقتها لإكمال إجراء المادة 4 فيما يتعلق بالشبكة المعنية. وأظهرت نتائج هذه التفحصات أنه لم يتم تحديد أي حديمة لأي إدارة على أنها متاثرة في حالة إبلاغ هذه الإداراة عن عدم موافقتها على أئس سلامة وفقاً للفقرات 10.2.4 أو 13.2.4 أو 14.2.4 من المادة 4 في التدبيل 30A ، وعدم الحصول على موافقتها بموجب الفقرة 16.2.4 . وبالإضافة إلى ذلك، لم يتم مؤخراً تعين أي خدمات لأي إدارة بوصفها خدمات متاثرة نتيجة هذه التعديلات في الخصائص المقدمة أصلأً، وفقاً للفقر..
٤. نظراً إلى ما تقدم، حصل المكتب إلى الاستنتاج، طبقاً للفقرة 19.2.4 من التدبيلين 30 و30A، أن إجراء المادة 4 قد طبق بنجاح بشأن الشبكة الساتلية المعنية. وعليه فقد أدرجت التخصيصات المطروحة في الخطة، وبذلك يكون قد تم تحديد الحالة المرجعية للخططة وبقية بطاقات التبليغ المقدمة بموجب المادة 4 والتي ما زالت في مرحلة تطبيق هذه المادة.

**AP30-30A/E/389**

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# **EXHIBIT 5**



Radiocommunications Agency  
Ministry of Economic Affairs, Agriculture and  
Innovation

International Telecommunication Union  
Telecommunication Bureau  
Attn Mr. M. Sakamoto  
Head SNP  
Place des nations  
1211 Geneva 20  
Switzerland

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9700 AL Groningen  
The Netherlands  
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**Contact**  
J.G. Kroon  
T +31 50 5877 344

+41 22 730 5785

**fax**

Date 15 November 2010  
Subject Application of Article No. 4.4 of the ITU Radio Regulations

**Our reference**  
AT-EL&I/6510157  
**Number of pages**  
2 (including cover page)

Dear Mr. Sakamoto,

With this fax the Netherlands Administration would like to ask you to clarify a point from our meeting in July of this year.

We discussed the possibility of an administration bringing into use a satellite network prior to completion of the procedures in Article 4 of the Region 2 BSS Plan. I believe that both you and Mr. Henri indicated that Article No. 4.4 of the RR could not be relied upon to override the Plan's prohibitions against premature operation. Could you please confirm that this was your view?

It is clear to me that even if someone tried to claim operation of a satellite network under Article No. 4.4, they would need to notify under No. 4.4 or No. 8.4 and not claim that assignments made under another set of regulations are able to operate under No. 4.4. At the very least, they would need some kind of domestic authority that meets both of the "express" conditions in No. 4.4. Is this your view as well?

Finally I would like to ask you if in case an operator/administration used Article No. 4.4, it can simply be claimed or are there procedures to follow?

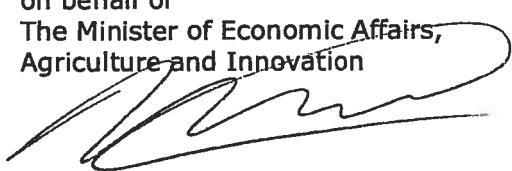
Please contact Mr. Johan Kroon of my Administration (tel. +31 50 5877 344 or e-mail: [johan.kroon@at-ez.nl](mailto:johan.kroon@at-ez.nl)) if you need any further details.

**Date**  
15 November 2010  
**Our reference**  
AT-EL&I/6510157

Thank you in advance for your guidance.

Yours sincerely,

on behalf of  
The Minister of Economic Affairs,  
Agriculture and Innovation



M.M. Hoogland MSc.MBA  
*Head of the Networks Department*  
Radiocommunications Agency Netherlands

CC: Mr. Y. Henri, ITU

24. NOV. 2010 16:11

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# INTERNATIONAL TELECOMMUNICATION UNION

Radiocommunication Bureau

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Place des Nations  
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Date: 24 November 2010 Time: Page 1/1 Ref: 30-30A4(SNP)/0.4370/10

To: Radiocommunications Agency Netherlands  
P.O. Box 450  
NL - GRONINGEN , 9700 AL  
Netherlands

From: Yvon Henri, Chief, SSD

For your reply:

E-Mail: BRMail@itu.int  
Fax: +41 22 730 5785 Tel: +41 22 730 5536

Subject: Operation of Space Stations under Provision 4.4 of the Radio Regulations

Ref.: a) Your telefax AT-EL&I/6510157 dated 15 November 2010

Dear Sir/Madam,

1. The Radiocommunication Bureau acknowledges receipt of the telefax referred to above. In this regard, the Bureau would like to inform your administration that for the Bureau to process a request for recording an assignment under provision No. 4.4 of the Radio Regulations, this request has to be submitted to the Bureau by the notifying administration in forms specified in Appendix 4. Regarding the national authorisation to operate a satellite network under No. 4.4, this is the prerogative of the administration and beyond the scope of responsibility of the Bureau.

2. The application of No. 4.4 of the Radio Regulations to Region 2 broadcasting-satellite service space stations in the frequency bands 12.2-12.7 GHz & 17.3-17.8 GHz is not in compliance with the observance of the provisions in the Radio Regulations, namely those mentioned in provisions 3.2, 4.2.1, 4.2.6, 4.2.16, 4.2.23, 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.2.2, 5.2.2.2 and 5.2.6 of Appendices 30 and 30A. The attention of your administration is drawn also to specific provisions like 4.2.21A that allow provisional recording of assignments in the MIFR when the agreement seeking procedure has not been successfully effected.

3. The Bureau is of the opinion that frequency assignments to a satellite network should be operated in application of the due process of the agreement seeking and notification procedures, even if the required agreements cannot be obtained with all the administrations. In that regard, No. 4.4 of the Radio Regulations cannot be invoked in the case of missing agreements.

4. Please also note that there is a provision, namely 5.1.4 of Appendices 30 and 30A, that anticipates submission of a notice after the assignments have been brought into use. There are a number of assignments recorded in the MIFR in application of this provision.

Yours faithfully,

  
Yvon Henri  
Chief, Space Services Department