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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

Federal Communications Commission
Office of the Secretary

In re the Application of)
)
ATCONTACT COMMUNICATIONS, LLC)
)
For a Modification of License to Specify the)
87° W.L. Orbital Location Instead of 83° W.L.)
in the Ka-band Fixed-Satellite Service)

File No. SAT-AMD-20060905-00098
Call Sign S2680

To: The Commission

**COMMENTS OF
NORTHROP GRUMMAN SPACE & MISSION SYSTEMS CORPORATION**

Northrop Grumman Space & Mission Systems Corporation (“NGST”), by its attorneys and pursuant to Section 25.154(a) of the Commission’s Rules, 47 C.F.R. § 25.154(a), hereby submits its comments in response to the application of ATCONTACT COMMUNICATIONS, LLC (“@contact”) for an amendment to @contact’s pending modification of license application with respect to a Ka-band space station that is authorized to be launched to and operated from the 83° W.L. orbital location. In its modification of license application, @contact proposes to add 2 x 1000 MHz of Ka-band fixed-satellite service (“FSS”) spectrum that is allocated and designated for the primary use of geostationary satellite orbit (“GSO”) FSS networks to its licensed Ka-band satellite at 83° W.L. In the above-captioned September 5, 2006 amendment on which NGST is commenting now, @contact proposes to relocate the satellite – which includes current authority to operate 2 x 500 MHz of Ka-band FSS spectrum in the 18.8-19.3 GHz and 28.6-29.1 GHz bands on a secondary basis to non-geostationary satellite orbit (“non-GSO”) systems – from 83° W.L. to 87° W.L.

NGST emphasizes at the outset that it does not oppose @contact’s application in any way. NGST does, however, offer these comments on the general nature, conditions, and

opportunities that are possible for secondary GSO operations in the 18.8-19.3 GHz and 28.6-29.1 GHz bands.

I. Background

NGST, which is an applicant for a GSO FSS satellite that would operate on a secondary basis in the non-GSO primary bands at 18.8-19.3 GHz and 28.6-29.1 GHz from the 89° W.L. orbital location,¹ has some concerns about the proposed proximity of @contact's satellite to NGST's proposed satellite using the same frequency bands just two degrees to the west. NGST believes that for the 18.8-19.3 GHz and 28.6-29.1 GHz bands, where GSO networks are obliged by the Commission's rules and policies to protect non-GSO FSS systems from interference, the geostationary arc will not experience the kind of congestion that has led the Commission to embrace a two-degree spacing policy in the Ka-band GSO primary spectrum. This in turn provides an opportunity for the GSO networks that qualify to operate in the non-GSO primary spectrum to introduce some different kinds of service offerings that would not necessarily be compatible with the restrictions that such networks experience in trying to be compatible with a similar network located just two degrees away. NGST is eager to explore the potential for these types of newer offerings in the 18.8-19.3 GHz and 28.6-29.1 GHz bands from its proposed location at 89° W.L., but will not be able to do so if it must operate two degrees away from the satellite @contact is not trying to move to 87° W.L. If @contact insists on moving so close to NGST, NGST will consider – and has indeed begun assessing its options for doing so – amending its pending application for 89° W.L. to specify an orbital location

¹ See Application of Northrop Grumman Space & Mission Systems Corporation, File No. SAT-LOA-19970905-00081, as amended by SAT-AMD-20040312-00032.

from which it can operate at least four degrees away from another GSO FSS satellite that operates in the 18.8-19.3 GHz and 28.6-29.1 GHz bands.

II. Discussion

NGST emphasizes that it fully supports @contact's desire to find an orbital location from which it can, as NGST proposes to do in at least one case, offer Ka-band FSS service from a single location in the 2 x 1000 MHz of primary GSO FSS spectrum and on a secondary basis in the 2 x 500 MHz of primary non-GSO FSS systems. To the extent that @contact (using a scheme developed and initially proposed to the Commission by NGST) will successfully protect non-GSO FSS systems operating on a primary basis in the 18.8-19.3 GHz and 28.6-29.1 GHz bands from harmful interference, such operation will maximize the efficient use of the orbital spectrum resource and greatly improve economies of scale in the operation of its proposed GSO network.

NGST believes that GSO operation in the primary non-GSO FSS spectrum in the 18.8-19.3 GHz and 28.6-29.1 GHz bands presents an opportunity for some innovative policy making on the Commission's part. If the Commission were to permit GSO networks to operate with smaller earth terminals – i.e., terminals that are approximately half the size in diameter of the typical ~70 cm Ka-band user terminals that are permitted under rules that apply in the Ka-band GSO primary spectrum – but at degradation levels with respect to adjacent satellites that are comparable to the degradation levels achieved under the rules applicable in the GSO primary bands, the spacing between GSO satellites in these bands would need to increase from two degrees to about four degrees.

The Commission's two-degree spacing policy for GSO FSS networks has been extended by default to the 18.8-19.3 GHz and 28.6-29.1 GHz bands.² In granting @contact's initial applications, the Commission ruled for the first time that it would apply the two-degree spacing requirement currently applied to GSO-like satellites in the C-band, Ku-band, and Ka-band frequencies to GSO-like proposed satellites in the 18.8-19.3 GHz and 28.6-29.1 GHz bands.³ Both @contact and NGST have made showings in each of their applications for GSO satellites that would use the 18.8-19.3 GHz and 28.6-29.1 GHz bands that the proposed networks can operate in a two-degree spacing environment.

Two-degree orbital spacing is a sound policy in the frequency bands where the GSO FSS is primary, and where maximization of the use of the orbital/spectrum resources is a principal objective of the Commission's and U.S. national policy. Nevertheless, a departure from this policy appears justified in the case of GSO FSS use of the 18.8-19.3 GHz and 28.6-29.1 GHz bands. Unlike the other bands mentioned in the *@contact Order*, GSO FSS operations are not primary in the 18.8-19.3 GHz and 28.6-29.1 GHz bands; non-GSO FSS operations are primary and must be protected by GSO FSS networks. Increased spacing between GSO FSS satellites would facilitate protection of the primary non-GSO systems by limiting the aggregate interference that is produced into the bands. Moreover, increased spacing could facilitate the introduction of some important new applications – e.g., drop-in systems for facilitating disaster recovery, or rapidly-deployable systems for use in furthering homeland security. Any downside here would be modest at most, as the requirement to protect

² See Public Notice, *Classification of 47 C.F.R. § 25.140(b)(2) Space Station Application Interference Analysis*, Report No. SPB-207 (released June 16, 2004).

³ *@contact* MEO Communications, LLC, DA 0864, slip op. at 15 (¶ 37) (released April 14, 2006) (“*@contact Order*”).

non-GSO FSS systems will prove to be a significant barrier to entry to most prospective GSO networks, and will keep orbital congestion at bay for the foreseeable future.

From a technical standpoint, smaller earth terminals are able to be used in these bands in a manner consistent with existing Commission and International Telecommunication Union regulations on power flux density levels. In terms of the potential interference degradation to and from other satellite systems, the degradation level would not be an acceptable level if the orbital spacing between GSO satellites using such terminals in the 18.8-19.3 GHz and 28.6-29.1 GHz bands is two degrees. However, if the orbital spacing were permitted to be four degrees or so, the interference degradation level between GSO satellite networks would be within an acceptable level.

Under these circumstances, and in the face of the unique opportunities that are presented, @contact and NGST should not have GSO satellites as part of their networks that are spaced fewer than four degrees apart where operations in the 18.8-19.3 GHz and 28.6-29.1 GHz bands are concerned.⁴ NGST has been planning to address this view by amending its application for a GSO space station in the 18.8-19.3 GHz and 28.6-29.1 GHz bands at 119° W.L.⁵ to specify an orbital location that is four or more degrees away from @contact's newly-licensed satellite at 121° W.L. Now, with @contact's proposal to move from six degrees away from NGST's 89° W.L. satellite filing to just two degrees away, a similar reevaluation is underway by NGST for this location.

⁴ NGST emphasizes that any spacing greater than two degrees would be applicable only for the Ka-band frequencies where GSO FSS networks are secondary users and obliged to demonstrate full protection of non-GSO FSS systems. All of NGST's proposed GSO satellites are and will continue to be fully compliant with two-degree spacing considerations and associated rules as far as operations in the 2 x 1000 MHz of Ka-band primary GSO spectrum are concerned.

⁵ See Application of Northrop Grumman Space & Mission Systems Corporation, File No. SAT-LOA-19970905-00084, as amended by SAT-AMD-20040312-00031.

NGST intends to address the orbital spacing point further in forthcoming amendments to its applications for GSO satellites that utilize the 18.8-19.3 GHz and 28.6-29.1 GHz bands on a secondary basis to non-GSO FSS systems. NGST expects to amend its subject applications in this regard by the end of this year, and will include in those filings the showings pertaining to the new types of operations it envisions here. In particular, any and all amendments will have a detailed explanation of NGST's objectives and the supporting public interest rationale, and will include all necessary requests for waivers of extant Commission rules and policies regarding two-degree spacing.

III. Conclusion

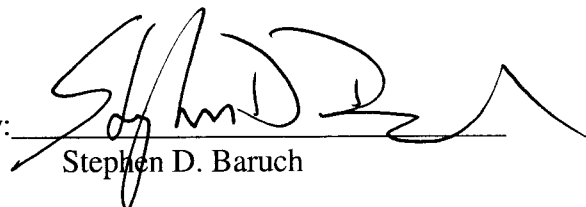
In summary, the Commission has an opportunity to create a limited and meaningful exception to the two-degree spacing policy it has extended by default to secondary GSO FSS networks in the 18.8-19.3 GHz and 28.6-29.1 GHz bands. It can ensure that its commitment to the protection of primary non-GSO FSS systems in this band is satisfied, while making possible exciting and valuable new FSS applications that will advance the public interest in these challenging times. All it has to do is permit the limited number of secondary GSO FSS networks that will qualify for operation in the 18.8-19.3 GHz and 28.6-29.1 GHz bands to be configured for operation in a four-degree spacing environment, rather than a two-degree spacing environment.

Although NGST encourages @contact to reconsider its amendment and not seek to move to within four degrees of NGST's proposed satellite at 89° W.L., NGST has begun exploring whether there is a suitable orbital location other than 89° W.L. that will enable NGST to achieve the objectives it has identified in outline form here, while still achieving the overall service objectives NGST is pursuing for its hybrid GSO/non-GSO FSS system in the

Ka-band and V-band FSS frequency bands. NGST has been exploring these options for some time with respect to its proposed satellite at 119° W.L. (which is only two degrees east of an @contact GSO satellite authorized for the 18.8-19.3 GHz and 28.6-29.1 GHz bands at the 121° W.L.). NGST intends to submit amendments to the GSO applications in its GESN system no later than next month, and accepts the fact that the ensuing further delay in the grant of its overall system proposal is a reasonable tradeoff for the improved efficiency and service opportunities.

Respectfully submitted,

NORTHROP GRUMMAN SPACE
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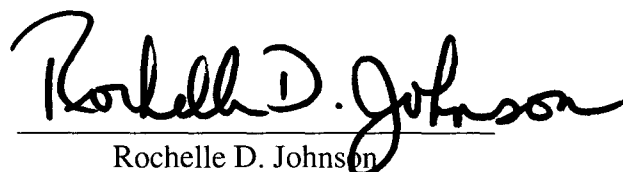
Its Attorneys

CERTIFICATE OF SERVICE

I, Rochelle D. Johnson, do hereby certify that on this 6th day of November, 2006, I sent by U.S. first-class, postage prepaid mail, a copy of the foregoing *Comments of Northrop Grumman Space & Mission Systems Corporation* to the following:

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