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

In the Matter of	)	
	)	
DIRECTV ENTERPRISES, LLC	)	File Nos.
	)	
Applications for Authority to Launch	)	SAT-RPL-20050322-00070
and Operate the DBS and Ka-band	)	SAT-LOA-20051123-00250
Payloads on the DIRECTV 9S Satellite;	)	
	)	
Amendment to Change Orbital Location	)	SAT-AMD-20051114-00216
	)	
	)	Call Signs: S2669, S2689

ORDER AND AUTHORIZATION

Adopted: July 21, 2006 **Released:** July 21, 2006

By the Chief, Satellite Division, International Bureau:

I. INTRODUCTION

1. By this Order, we authorize DIRECTV Enterprises, LLC (DIRECTV) to launch and operate DIRECTV 9S, a Geostationary Satellite Orbit (GSO) satellite which will contain a Direct Broadcast Satellite (DBS) space station and a Fixed Satellite Service (FSS) Ka-band[1] space station,[2] at the 101.10° W.L. orbital location. At the same time, we conditionally grant DIRECTV's requests for waivers of three of the Commission's rules.[3] As explained below, we also decline to condition this license grant on DIRECTV's successful physical coordination of the DIRECTV 9S satellite's stationkeeping volume with the satellites of Mobile Satellite Ventures Subsidiary LLC (MSV) at the nominal 101° W.L. location, as sought by MSV.[4] We find, however, that a frequency coordination condition is warranted as a condition on DIRECTV's request for a waiver of the cross-polarization isolation requirements of Sections

[1] As used in this Order, the term "Ka-band" refers to the 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 28.35-28.6 GHz (Earth-to-space), and 29.25-30.0 GHz (Earth-to-space) frequency bands.

[2] As used in this Order, the term "space station" has the meaning given in the International Telecommunication Union (ITU) Radio Regulations, *i.e.* one or more transmitters, or receivers or a combination of transmitters and receivers necessary for carrying on a radiocommunication service, and located on an object which is beyond, or is intended to go beyond, the major portion of the Earth's atmosphere. *See* ITU Radio Regulations Articles 1.61 and 1.64. *See also* 47 C.F.R. § 25.201.

[3] *See* File No. SAT-RPL-20050322-00070 ("DIRECTV DBS Application") at Exhibit C and File No. SAT-LOA-20051123-00250 ("DIRECTV FSS Application") at Exhibit C, 47 C.F.R. §§ 25.202(g), 25.210(i), 25.215.

[4] *See* Comments of Mobile Satellite Ventures Subsidiary LLC, filed May 31, 2005 (MSV Comments).

25.210 and 25.215 of the Commission's rules. Further, we impose the standard frequency coordination condition required for Ka-band systems. In granting this authorization, we conclude that the DBS space station will provide DBS national and local-into-local programming, while the FSS Ka-band space station will allow for the expansion of local-into-local services into additional markets by providing additional capacity for backhauling the signals of local broadcast stations.

II. BACKGROUND

2. Six in-orbit satellites are authorized to operate at assigned locations within 0.25 degrees of the 101° W.L. location. Specifically, MSV's in-orbit satellite, AMSC-1, is authorized to operate at the 100.95° W.L. orbital location with ± 0.05° longitudinal stationkeeping.[5] AMSC-1 therefore has an authorized longitudinal range of 100.90° W.L. to 101.00° W.L. DIRECTV's DIRECTV 1R satellite is authorized at the 100.85° W.L. orbital location with ± 0.05° longitudinal stationkeeping, *i.e.*, DIRECTV 1R currently has an authorized longitudinal range of 100.80° W.L. to 100.90° W.L.[6] DIRECTV's DIRECTV 4S satellite is authorized at the 101.20° W.L. orbital location with ± 0.05° longitudinal stationkeeping, thus DIRECTV 4S has an authorized longitudinal range of 101.15° W.L. to 101.25° W.L. SES Americom has a satellite, AMC-4, that is authorized to operate at the 101.00° W.L. orbital location with ± 0.05° longitudinal stationkeeping, thus AMC-4 has an authorized longitudinal range of 100.95° W.L. to 101.05° W.L.[7] DIRECTV's DIRECTV 8 satellite is authorized to operate at the 100.75° W.L. orbital location with ± 0.05° longitudinal stationkeeping, thus DIRECTV 8 has an authorized longitudinal range of 100.70° W.L. to 100.80° W.L.[8] In addition to the in-orbit satellites, one satellite is authorized to operate within 0.25 degrees of the 101° W.L. orbital location but is not yet launched. Specifically, on May 23, 2005, the Commission granted MSV's application for MSV-1 to be located at the 101.0° W.L. orbital location with ±0.05° longitudinal stationkeeping,

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[5] *See* International Bureau, Policy Branch Information: Actions Taken, *Public Notice,* 19 FCC Rcd 20460 (rel. August 27, 2004) (Granting File No. SAT-MOD-20040623-00120).

[6] *See* International Bureau, Policy Branch Information: Satellite Space Applications Accepted for Filing, *Public Notice,* Report No. SAT-00123, File No. SAT-STA-20020910-00172 (rel. September 27, 2002). The DIRECTV 1R satellite was relocated in conjunction with the relocation of the DIRECTV 3 satellite to enable DIRECTV 1R to carry the traffic assigned to DIRECTV 3. DIRECTV subsequently filed a modification application to make these changes permanent. *See* File No. SAT-MOD-20030205-00032. This application, except for the portion dealing with the request to redesignate the orbital location for DIRECTV 1R, was withdrawn by DIRECTV on March 9, 2004. *See* Letter from James R. Butterworth, Senior Vice President, DIRECTV, to Thomas S. Tycz, Chief, Satellite Division, International Bureau, dated March 9, 2004. *See also* http://svartifoss2.fcc.gov/servlet/ib.page.FetchAttachment?attachment_key=374272 for grant-stamped application to move DIRECTV 1R.

[7] *See* Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service and the Applications of GE American Communications, Inc., *Order and Authorization,* 15 FCC Rcd 3385 (1999) (*AMC-4 Authorization Order*) (granting File No. SAT-MOD-19981023-00076 for the 101.00° W.L. orbital location). Subsequent modifications and STA's relating to AMC-4 did not affect the regularly authorized orbital location. *See* International Bureau, Policy Branch Information: Actions Taken, *Public Notice,* Report No. SAT-00194 (rel. February 23, 2004) (Granting File No. SAT-STA-20030626-00118); Report No. SAT-00128 (rel. November 15, 2002) (granting File No. SAT-MOD-20021108-00206).

[8] *See* DIRECTV Enterprises, LLC Applications for Modification of Assigned Orbital Location of the DIRECTV 8 (K) Ka-band Payload and DIRECTV 8 (D) DBS Payload from 100.85° W.L. to 100.75° W.L., *Order,* 20 FCC Rcd 15819 (rel. Oct. 7, 2005).

thus MSV-1 has an authorized longitudinal range of 100.95° W.L. to 101.05° W.L.[9] The MSV-1 satellite is expected to be launched in 2010. Finally, DIRECTV has an application to launch and operate a satellite at the nominal 101° W.L. orbital location pending at the Commission.[10]

3. On March 22, 2005, DIRECTV filed an application seeking authority to launch and operate DIRECTV 9S,[11] a DBS satellite which is intended to operate pursuant to DIRECTV's existing authority to operate on all 32 DBS channels in the 17.3-17.8 GHz frequency band in the Earth-to-space (uplink) direction, and on the 16 even-numbered channels in the 12.2 GHz-12.7 GHz frequency band in the space-to-Earth (downlink) direction at the nominal 101° W.L. orbital location.[12] On April 29, 2005, the application was placed on public notice as accepted for filing.[13] On May 31, 2005, MSV filed comments requesting that any grant of the DIRECTV 9S application be conditioned upon DIRECTV's successful coordination of the stationkeeping volume of DIRECTV 9S satellite with MSV's satellites at the same orbital location.[14] Subsequently, DIRECTV and MSV filed *ex parte* letters on this issue.[15]

4. On November 23, 2005, DIRECTV filed an application seeking authority to construct, launch, and operate a FSS Ka-band space station on the DIRECTV 9S satellite.[16] DIRECTV did not have previous authority to operate a FSS Ka-band space station at this location. On December 7, 2005, the application was placed on public notice as accepted for filing.[17] No comments were filed in response to this Public Notice. Finally, on November 14, 2005, DIRECTV filed an amendment to its DIRECTV 9S DBS and FSS applications to, *inter*

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[9] *See* Mobile Satellite Ventures Subsidiary LLC, *Order and Authorization,* 20 FCC Rcd 9752 (2005) (granting with conditions File Nos. SAT-LOA-19980702-00066, SAT-AMD-20001214-00171, SAT-AMD-20010302-00019, SAT-AMD-20031118-00335, SAT-AMD-20040209-00014, and SAT-AMD-20040928-00192) (*"MSV-1 Order"*) *pending* Petitions for Reconsideration/Clarification. We note that both MSV and EchoStar have filed petitions regarding the *MSV-1 Order.* Petition for Clarification and/or Reconsideration filed by EchoStar Satellite L.L.C. on June 22, 2005; and Petition for Clarification or Partial Reconsideration filed by Mobile Satellite Ventures Subsidiary LLC on June 22, 2005. Our action here is without prejudice to these petitions.

[10] File Nos. SAT-LOA-19970605-00050 (application to operate in the 17 GHz band). This application has not yet been accepted for filing.

[11] DIRECTV DBS Application.

[12] DIRECTV DBS Application at 1. The DIRECTV 1 satellite was previously moved to the 72.5° W.L. orbital location. *See* Applications of DIRECTV Enterprises LLC, *Order and Authorization,* 11 FCC Rcd 11772 (2005).

[13] *See* International Bureau, Policy Branch Information: Satellite Space Applications Accepted for Filing, *Public Notice,* Report No. SAT-00288 (rel. April 29, 2005).

[14] MSV Comments at 3.

[15] Letter to Marlene H. Dortch, Secretary, Federal Communications Commission, from William M. Wiltshire, Counsel for DIRECTV Enterprises, LLC, dated September 22, 2005 (DIRECTV Ex Parte Letter). Letter to Marlene H. Dortch, Secretary, Federal Communications Commission, from William M. Wiltshire, Counsel for DIRECTV Enterprises, LLC, dated September 22, 2005 (DIRECTV Ex Parte Letter).

[16] DIRECTV FSS Application. We note that DIRECTV initially filed its application for a FSS Ka-band space station on the DIRECTV 9S satellite on August 22, 2005. File No. SAT-LOA-20050822-00165. This application was dismissed as defective. *See* Letter to William M. Wiltshire, Esq., Harris, Wiltshire & Grannis LLP, from Fern J. Jarmulnek, Deputy Chief, Satellite Division, International Bureau, FCC, dated November 17, 2005.

[17] *See* International Bureau, Policy Branch Information: Satellite Space Applications Accepted for Filing, *Public Notice*, Report No. SAT-00333 (rel. Dec. 7, 2005).

alia, change the requested orbital location of the proposed DIRECTV 9S satellite from 101.125° W.L. to 101.10° W.L.[18] The amendment was placed on public notice as accepted for filing on March 10, 2006.[19] In addition, DIRECTV is seeking waivers of Sections 25.202(g), 25.210(i), and 25.215 of the Commission's rules.[20] No comments were filed.

III. DISCUSSION

A. DIRECTV's DBS System at the Nominal 101° W.L. Orbital Location

5. DIRECTV currently operates a system of DBS satellites at the 101° W.L., 110° W.L., 119° W.L., and 72.5° W.L. nominal orbital locations.[21] DIRECTV explains that the DBS space station on the DIRECTV 9S satellite will add to its capacity at the nominal 101° W.L. orbital location and is intended to replace the DIRECTV 1 satellite's capacity at this location.[22] The DBS space station of the DIRECTV 9S satellite will be collocated at the nominal 101° W.L. orbital location with the DIRECTV 1R, DIRECTV 4S, and DIRECTV 8 satellites, where it will continue to provide national and local-into-local programming to DIRECTV subscribers, and will also provide redundancy for DIRECTV's existing DBS satellites.[23] We conclude that granting DIRECTV's application for the DBS space station on the proposed DIRECTV 9S satellite is in the public interest because it will result in increased efficiency and capacity for DIRECTV's DBS satellite system which will allow DIRECTV to improve its service offerings to consumers.

B. Ka-band Authorization

6. We note that the application for the FSS Ka-band space station of the proposed DIRECTV 9S satellite is for a new GSO-like space station, and is thus subject to the first-come, first-served procedure set forth in the *First Space Station Reform Order.*[24] Under the first-come, first-served procedure, the Commission will grant GSO-like applications if the Commission finds that the applicant is qualified to hold a satellite license and that the proposed satellite will not cause harmful interference to a previously licensed satellite. DIRECTV holds numerous Commission satellite licenses, and no one has questioned its legal qualifications to acquire a new satellite license. Accordingly, we find that DIRECTV is legally qualified to hold a satellite license. We also find that, because DIRECTV has submitted the required technical information,

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[18] File No. SAT-AMD-20051114-00216 ("Amendment"). This Amendment pertained to File Nos. SAT-RPL-20050322-00070 (DBS) and SAT-LOA-20050822-00165 (FSS).

[19] *See* International Bureau, Policy Branch Information: Satellite Space Stations Accepted for Filing, *Public Notice,* Report No. SAT-00347 (rel. March 10, 2006).

[20] DIRECTV DBS Application at Exhibit C, DIRECTV FSS Application at Exhibit C. DIRECTV is seeking waivers of Sections 25.202(g) and 25.215 in its DBS Application, and it is seeking waivers of Sections 25.202(g) and 25.210(i) in its FSS Application.

[21] DIRECTV DBS Application at 1.

[22] *Id.*

[23] *Id.*

[24] Amendment of the Commission's Space Station Licensing Rules and Policies, *First Report and Order and Further Notice of Proposed Rulemaking,* 18 FCC Rcd 10760, 10810-12 (paras. 125-131) (2003) (*First Space Station Reform Order*).

including adequate justification for waivers of several technical requirements, it is technically qualified to hold a satellite license. Finally, based on our review of DIRECTV's application, we find that the FSS Ka-band space station of the proposed DIRECTV 9S satellite will not cause harmful interference to any previously licensed satellites.

7. ***Ka-band Coordination with Federal Systems.*** Ka-band space systems operating in the 18.3-18.8 and 19.7-20.2 GHz bands are required to coordinate with Federal fixed-satellite service systems, both geostationary and non-geostationary, in accordance with footnote US334 to the U.S. Table of Frequency Allocations.[25] Accordingly, DIRECTV's Ka-band authorization is conditioned on this coordination requirement.[26] Consequently, absent a coordination agreement pursuant to footnote US334, DIRECTV shall operate its Ka-band downlinks on a non-harmful interference basis with regards to Federal systems in the 18.3-18.8 and 19.7-20.2 GHz bands and must terminate its Ka-band downlink operations immediately in the event that such operations cause harmful interference into operating Federal systems. In addition, DIRECTV must accept interference from such systems absent a coordination agreement pursuant to footnote US334.

8. ***Bond Requirement.*** In the *First Space Station Reform Order,* the Commission eliminated the financial requirements then in place and replaced them with a bond requirement.[27] The bond requirement is intended to deter speculative space station applications and ensure that satellites are timely launched and service is provided to customers. Under this requirement, entities awarded a license for a new GSO-like satellite must execute a $3 million bond, payable to the U.S. Treasury, within 30 days of the date of license grant.[28] Accordingly, DIRECTV must post a bond for $3 million within 30 days of the grant of this FSS Ka-band space station license. Failure to do so will render DIRECTV's license for the FSS Ka-band space station of the proposed DIRECTV 9S satellite null and void. We note, however, that the satellite appears to be scheduled for launch in September 2006.[29] Accordingly, if the satellite is successfully launched within 30 days of the date of this order, no bond will be required.

C. Coordination of Stationkeeping volumes

9. MSV asserts that DIRECTV should be required to coordinate stationkeeping volumes with MSV as a condition of its license.[30] On September 22, 2005, DIRECTV filed an *ex parte* letter stating that such a condition is without precedent.[31] DIRECTV also stated that because the DIRECTV 9S satellite will replace another DBS DIRECTV satellite that was previously located at the nominal 101° W.L. orbital location, there will be no increase in congestion at this orbital

[25] *See also* 47 C.F.R. § 2.106.

[26] A licensee may initiate coordination under US 334 by submitting a letter request to the Commission.

[27] *First Space Station Reform Order,* 18 FCC Rcd at 10824. *See also* 47 C.F.R. § 25.165.

[28] 47 C.F.R. § 25.165(a)(2).

[29] http://www.sworld.com.au/steven/space/ariane-man.txt (last visited on July 20, 2006).

[30] MSV Comments at 3. MSV states that the fact that DIRECTV may launch and operate its DIRECTV 9S satellite prior to MSV launching and operating its MSV-1 satellite should not "prejudice MSV's right or limit MSV's flexibility to operate at this orbital location."

[31] DIRECTV Ex Parte Letter.

location.[32] On September 30, 2005, MSV filed an *ex parte* letter in response to DIRECTV's letter.[33] MSV states that the Commission should make it clear that launch and operation of the new DIRECTV satellite prior to launch and operation of MSV's next-generation satellite does not provide DIRECTV with greater rights than MSV to operate at a given location in the orbital arc.[34]

10. We will not require physical coordination as a condition on DIRECTV's license. There is no overlap between the stationkeeping volumes of the proposed DIRECTV 9S satellite and MSV's authorized satellites.[35] We also note that the authorization for the MSV-1 satellite was not conditioned upon successful coordination of its stationkeeping volume with the stationkeeping volumes of DIRECTV's satellites at the same location. Therefore, adopting the condition proposed by MSV would constitute inconsistent treatment of the two licensees.[36] We note, however, that parties licensed at a particular orbital location are expected to coordinate with other parties licensed at the same location to avoid in-orbit collisions.[37] Thus, we will not impose the particular stationkeeping condition requested by MSV regarding adjacent satellite coordination on DIRECTV and will, as is our normal practice, rely on the operators to coordinate in good faith.[38]

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[32] *Id.* at 2.

[33] MSV Ex Parte Letter.

[34] *Id.*

[35] *See* MSV Comments. As noted in fn. 9 *supra*, on June 22, 2005, MSV filed a petition seeking clarification or partial reconsideration of the Commission's May 23, 2005 grant of its application to operate the MSV-1 satellite at the 101.0° W.L. orbital location with ± 0.05° longitudinal stationkeeping, which is currently pending. In its petition, MSV states that it believes that its MSV-1 satellite is subject to ± 0.10° longitudinal stationkeeping. Petition for Clarification or Partial Reconsideration filed by Mobile Satellite Ventures Subsidiary LLC on June 22, 2005.

[36] *See* DIRECTV Ex Parte Letter at 2.

[37] *See* Mitigation of Orbital Debris, *Second Report and Order,* 19 FCC Rcd 11567 (2004) (*Orbital Debris Second Report and Order).* In the *Orbital Debris Second Report and Order,* the Commission concluded that, while the choice of orbital regimes is best left to the discretion of operators, in some instances the public interest would be served by a detailed discussion of how operators would avoid potential collisions between operational spacecraft with overlapping stationkeeping volumes. *Id.* at para. 49. For example, where operators proposed to co-locate multiple satellites at the same geostationary orbital location, the Commission required operators to state what measures will be taken to prevent collisions. *Id.* at para. 51. The Commission noted that, although it is possible to successfully locate multiple satellites at a single location and within the same stationkeeping volume, such arrangements require real-time coordination that must be disclosed to the Commission. *Id.* The record reflects that DIRECTV, MSV, and SES Americom have held discussions concerning the current arrangement of satellites at the 101° W.L. orbital location. DIRECTV Ex Parte Letter at 1. We note that should a coordination arrangement between the licensees result in parameters not consistent with the authorized parameters for any space station, we expect the licensee of that space station to file an appropriate modification request prior to implementation of that agreement. Operations not consistent with those authorized are subject to enforcement action.

[38] *See, e.g.*, Satellite Transponder Leasing Corp., 5 FCC Rcd 1651, 1652 (Com. Car. Bur. 1990) and American Satellite Company, 5 FCC Rcd 1186, 1189 (Com. Car. Bur. 1990) (Bureau declined to impose coordination conditions where no insurmountable coordination issues were raised).

D. Waiver Requests

11. ***Telemetry, Tracking, and Control.*** Section 25.202(g) of the Commission's rules[39] requires that telemetry, tracking, and control (TT&C) functions for U.S.-licensed satellites be conducted at either or both ends of the allocated bands for the service. DIRECTV has requested a waiver of Section 25.202(g) so that it can use 14.0-14.5 GHz FSS frequencies[40] for the purpose of conducting transfer orbit TT&C operations for DIRECTV 9S.[41] DIRECTV explains that a waiver is necessary because Loral Skynet Network Services, Inc., which will be conducting transfer orbit TT&C on behalf of DIRECTV, employs Intelsat ground stations worldwide and none of these stations are equipped with 17 GHz command capabilities, and therefore, 14 GHz FSS frequencies must be used for the transfer orbit TT&C operations of DIRECTV 9S.[42] DIRECTV estimates that, barring unforeseen circumstances, the need to use 14 GHz FSS frequencies for transfer orbit TT&C will last for approximately a ten-day period after the satellite is launched.[43] DIRECTV states that it will follow standard industry practices for conducting transfer orbit operations, which include ensuring that no harmful interference occurs into the operation of any other satellite.[44]

12. The Commission may waive a rule for good cause shown.[45] Waiver is appropriate if special circumstances warrant a deviation from the general rule and such deviation would better serve the public interest than would strict adherence to the general rule.[46] Generally, the Commission may grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the pubic interest.[47]

13. The Commission has previously granted a waiver of Section 25.202(g) to DIRECTV for its DIRECTV 7S satellite based on virtually the same facts.[48] In the *DIRECTV 7S Order,* the Commission noted that it has previously stated that with respect to transfer orbit operations, operators may seek to use different earth stations than those that will ultimately be used for on-orbit operations.[49] In these cases, the earth station used for these relatively short-term transfer orbit TT&C functions may not necessarily be designed to operate in the edges of the DBS

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[39] 47 C.F.R. § 25.202(g).

[40] Specifically, 14003.0 MHz and 14497.0 MHz, with an emission bandwidth of 1 MHz.

[41] DIRECTV DBS Application at Exhibit C at 1, DIRECTV FSS Application at Exhibit C at 1.

[42] *Id.*

[43] *Id.*

[44] *Id.*

[45] 47 C.F.R. § 1.3.

[46] Northeast Cellular Telephone Co. v. FCC, 897 F.2d 1166 (D.C. Cir. 1990).

[47] WAIT Radio v. FCC, 418 F.2d 1153, (D.C. Cir. 1969); Dominion Video Satellite, Inc., *Order and Authorization,* 14 FCC Rcd 8182 (1999).

[48] *See* In the Matter of DIRECTV Enterprises, LLC, Application for Authority to Launch and Operate DIRECTV 7S, *Order and Authorization,* 19 FCC Rcd 7754 at paras. 11-14 (2004) ("*DIRECTV 7S Order*").

[49] *DIRECTV 7S Order* at para. 13 (*citing* In the Matter of Policies and Rules for the Direct Broadcast Satellite Service, *Report and Order,* 17 FCC Rcd 11331, 11392-93 at para. 132. (2002).

service bands.[50] The Commission also stated that because transfer orbit operations may occur at a location far from the final assigned orbit position, the earth station that will be used for on-orbit TT&C may not be available for transfer orbit TT&C.[51] Therefore, the Commission stated that it would evaluate requests to use FSS frequencies for transfer orbit TT&C operations on a case-by-case basis.[52]

14. We find that DIRECTV has shown good cause for granting a waiver of Section 25.202(g) for the limited purpose of transfer orbit TT&C operations of DIRECTV 9S. DIRECTV has shown that special circumstances exist that warrant a deviation from Section 25.202(g) for the limited purpose of short-term transfer orbit TT&C operations of the DIRECTV 9S satellite. The special circumstances are the lack of 17 GHz DBS-band TT&C facilities around the world, and the presence of 14 GHz FSS-band TT&C facilities. We anticipate that in the future, as more Ka-band satellite systems with TT&C links located within band are authorized, the Ka-band TT&C earth station network will be sufficiently developed so that there will not be a lack of such facilities and thus no need for operators to request waivers of Section 25.202(g) for out-of-band transfer orbit TT&C operations. Granting DIRECTV's waiver request for this limited purpose will not undermine the policy objective of the rule. Therefore, we grant DIRECTV's request for a waiver of Section 25.202(g) of the Commission's rules for the period from the launch of DIRECTV 9S until DIRECTV 9S is located at the 101.10° W.L. orbital location.

15. ***Cross-Polarization Isolation Requirement for FSS Space Stations.*** Section 25.210(i) of the Commission's rules requires space station antennas in the FSS to be designed to meet a cross-polarization isolation of 30 dB within the primary coverage area of the antenna.[53] DIRECTV states that the antennas of the DIRECTV 9S satellite are designed to meet a cross-polarization isolation of 27 dB.[54] As such, DIRECTV is requesting a waiver of Section 25.210(i).

16. The cross-polarization isolation requirement of Section 25.210(i) of the Commission's rules is a technical requirement which is necessary in order to facilitate two-degree orbital spacing between geostationary satellites. The Commission has stated that two-degree spacing between geostationary satellites is one of the cornerstones of its satellite licensing policies.[55] This policy permits the maximum use of the geostationary orbit. The two-degree orbital spacing requirement facilitates coordination of satellite networks and if it is not met, it will be difficult to coordinate the DIRECTV 9S satellite with satellites serving the U.S. that are two-degree compliant. There are currently no satellites serving the United States in the vicinity of the proposed location of the DIRECTV 9S satellite that operate in the same bands as

[50] *Id.*

[51] *Id.*

[52] *Id.*

[53] 47 C.F.R. § 25.210(i).

[54] DIRECTV FSS Application at Exhibit C at 2.

[55] *See* In the Matter of Application of New Skies Satellites, N.V. for Authorization to Access the U.S. Market, *Order and Authorization,* 14 FCC Rcd 13003, 13037 at para. 75 (1999).

DIRECTV 9S is seeking to operate in, however, except for other DIRECTV satellites.[56] As a result, the DIRECTV 9S satellite is not expected to cause harmful interference to any U.S. or foreign-licensed satellite serving the United States and licensed to another operator at this time. For this reason, we find that there is good cause to grant a waiver as conditioned of Section 25.210(i) of the Commission's rules in this instance.

17. In the future, should the Commission authorize access to the U.S. market to a satellite that is compliant with the two-degree spacing requirement, and is located as close as two degrees from DIRECTV 9S, DIRECTV will be expected to coordinate in good faith with the licensee of this satellite. If a coordination agreement is not reached, operation of DIRECTV 9S must be on a non-harmful interference basis relative to U.S. services being provided by any authorized system that is two-degree spacing compliant. Thus, DIRECTV's operations cannot cause more interference than would be caused if DIRECTV 9S complied with Section 25.210(i). Further, DIRECTV cannot claim protection against interference to its operations caused by U.S. services being provided by the two-degree compliant satellites if such interference results from failure of DIRECTV 9S to comply with Section 25.210(i).

18. ***Cross-Polarization Isolation Requirement for DBS Space Stations.*** Section 25.215 of the Commission's rules requires space station antennas in the DBS service to be designed to meet a cross-polarization isolation of 30 dB within the primary coverage area of the antenna.[57] DIRECTV states that the antennas of the DIRECTV 9S satellite (both spot and CONUS) are designed to meet a cross-polarization isolation of 27 dB.[58] Thus, DIRECTV is requesting a waiver of Section 25.215.

19. The Commission adopted the DBS cross-polarization requirement in 2002, applying the rule to new applications and applications for replacement satellites.[59] The rule was adopted to facilitate the ability of a U.S. DBS spacecraft to share frequencies with other U.S. DBS systems, particularly when two or more operators share the same nominal orbital position.[60] DIRECTV states that it has concluded that a cross-polarization isolation of 27 dB "is more than sufficient to avoid excessive levels of intra-system interference."[61] We note that since DIRECTV holds the license for all 32 DBS channels in the 101° W.L. DBS satellite cluster, the only other DBS satellites that will be co-located with the DIRECTV 9S satellite are other DIRECTV satellites. Therefore, there is no potential for harmful interference to the satellite systems of other operators as a result of the antennas of DIRECTV 9S having a cross-polarization isolation of 27 dB. For this reason, we find that there is good cause to grant a waiver of Section 25.215 of the Commission's rules in this instance. As the Commission has done in the past with respect to other waivers of Section 25.215, however, we condition this waiver on a requirement that DIRECTV coordinate the operations of DIRECTV 9S with other

[56] These satellites are Spaceway 2 at 99.2° W.L., DIRECTV 8 at 100.75° W.L., and Spaceway 1 at 102.8° W.L.

[57] 47 C.F.R. § 25.215.

[58] DIRECTV DBS Application at Exhibit C at 2.

[59] *See* Policies and Rules for the Direct Broadcast Satellite Service, *Report and Order,* 17 FCC Rcd 11331, 11385 (2002).

[60] *Id.*

[61] DIRECTV DBS Application at Exhibit C at 2.

potentially affected space stations.[62] If a coordination agreement is not reached, operation of DIRECTV 9S must be on a non-harmful interference basis relative to any DBS space stations that are in compliance with the cross-polarization isolation requirement. Thus, DIRECTV's operations cannot cause more interference than would be caused if DIRECTV 9S complied with Section 25.215.

20. Finally, we note that DIRECTV states that "cross-polarization interference is an intra-system design issue and does not affect inter-system coordination."[63] We do not agree with this statement. Because cross-polarization isolation is a component of the total carrier-to-noise-plus-interference (C/(N+I)) scenario for a satellite communications link, budgeting higher cross-polarization interference results in a reduction of the ability to tolerate some other interference source, such as adjacent-satellite interference. Thus, it cannot be said that cross-polarization isolation is strictly an intra-system design issue that has "no effect" on inter-system coordination. Therefore, DIRECTV cannot claim protection against interference to its operations caused by other DBS space stations to any greater extent than if DIRECTV 9S complied with Section 25.215.

E. Orbital Debris Mitigation

21. We note that, on November 14, 2005, DIRECTV filed an amendment to provide an Orbital Debris Mitigation Plan for DIRECTV 9S.[64] DIRECTV requests authority to launch and operate the DIRECTV 9S DBS and FSS space stations at the 101.10° W.L. orbital location. DIRECTV indicates that the requested location will enable it to operate its DIRECTV 9S satellite in a stationkeeping volume that does not overlap with any of the other space stations operating at the nominal 101° W.L. orbital location.[65] We conclude that the plan presented by DIRECTV for the DIRECTV 9S spacecraft demonstrates that its operation raises no public interest concerns related to orbital debris.[66]

IV. CONCLUSION AND ORDERING CLAUSES

22. Accordingly, IT IS ORDERED that, the applications of DIRECTV Enterprises LLC to launch and operate DIRECTV 9S, a GSO satellite which will contain a Direct Broadcast Satellite space station (Call Sign: S2669) and a Fixed Satellite Service Ka-band space station (Call Sign: S2689) and which will be located at the 101.10° W.L. orbital location, File Nos. SAT-RPL-20050322-00070, SAT-LOA-20051123-00250, and SAT-AMD-20051114-00216, ARE GRANTED, subject to the conditions contained in the succeeding ordering clauses.

23. IT IS FURTHER ORDERED that, pursuant to Section 25.121 of the Commission's

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[62] *See* In re EchoStar Satellite Corp., Directsat Corp., EchoStar DBS Corp. Application for Authority to Make Minor Modifications to Direct Broadcast Satellite Authorizations, Launch, and Operational Authority, *Memorandum Opinion and Order,* 13 FCC Rcd 8595, 8604 at para. 17 (1998).

[63] DIRECTV DBS Application at Exhibit C at 2.

[64] IBFS File No. SES-AMD-20051114-00216.

[65] Amendment at 1.

[66] All applications that were pending as of October 19, 2005 and were subject to the information requirements of Section 25.114 of the Commission's rules were required to file an Orbital Debris Mitigation Disclosure Plan by November 18, 2005. *See* International Bureau Satellite Division Information, Disclosure of Orbital Debris Mitigation Plans, Including Amendment of Pending Applications, *Public Notice,* DA 05-2698 (rel. Oct. 13, 2005).

rules, 47 C.F.R. § 25.121, the Direct Broadcast Satellite space station (Call Sign: S2669) of the DIRECTV 9S satellite IS AUTHORIZED for a license term of 10 years,[67] and the Fixed Satellite Service Ka-band space station (Call Sign: S2689) of the DIRECTV 9S satellite IS AUTHORIZED for a license term of 15 years from the date that DIRECTV Enterprises, LLC certifies to the Commission that the DIRECTV 9S satellite has been successfully placed into orbit and that the operations of the Direct Broadcast Satellite space station and the Fixed Satellite Service Ka-band space station fully conform to the terms and conditions of this authorization. Accordingly, DIRECTV is directed to provide its certification that the DIRECTV 9S satellite is operational within 90 days of the DIRECTV 9S satellite arriving at the 101.10° W.L. orbital location.

24. IT IS FURTHER ORDERED that DIRECTV Enterprises, LLC IS AUTHORIZED to operate the Direct Broadcast Satellite space station of its DIRECTV 9S satellite on all 32 DBS channels in the 17.3-17.8 GHz frequency band in the Earth-to-space (uplink) direction, and on the 16 even-numbered channels in the 12.2 GHz-12.7 GHz frequency band in the space-to-Earth (downlink) direction.

25. IT IS FURTHER ORDERED that DIRECTV Enterprises, LLC IS AUTHORIZED to operate the Fixed Satellite Service Ka-band space station of its DIRECTV 9S satellite in the 28.35-28.60 GHz, 29.25-29.50 GHz, and 29.50-30.00 GHz frequency bands in the Earth-to-space (uplink) direction, and in the 18.3-18.8 GHz and 19.7-20.2 GHz frequency bands in the space-to-Earth (downlink) direction.

26. IT IS FURTHER ORDERED that, pursuant to Section 1.3 of the Commission's rules, 47 C.F.R. § 1.3, DIRECTV Enterprises, LLC IS GRANTED a waiver of Section 25.202(g) of the Commission's rules, 47 C.F.R. § 25.202(g), to use the 14002-14004 MHz and 14496-14498 MHz bands for telecommand operations during transfer orbit for no longer than a 15-day period from the time of launch of the DIRECTV 9S satellite until it is established in a geostationary orbit.

27. IT IS FURTHER ORDERED that, pursuant to Section 1.3 of the Commission's rules, 47 C.F.R. § 1.3, the request of DIRECTV Enterprises, LLC for a waiver of the FSS space station antenna cross-polarization requirement contained in Section 25.210(i) of the Commission's rules, 47 C.F.R. § 25.210(i), IS GRANTED, with the condition that operation of the DIRECTV 9S FSS space station shall not cause more interference to U.S. services being provided by any authorized system that is two-degree spacing compliant than would be caused if the DIRECTV 9S FSS space station complied with Section 25.210(i). Further, DIRECTV shall not claim protection against interference to its operations caused by U.S. services being provided by the two-degree spacing compliant satellites if such interference results from failure of the DIRECTV 9S FSS space station to comply with Section 25.210(i) of the Commission's rules, 47 C.F.R. § 25.210(i).

28. IT IS FURTHER ORDERED that, pursuant to Section 1.3 of the Commission's rules, 47 C.F.R. § 1.3, the request of DIRECTV Enterprises, LLC for a waiver of the DBS space station antenna cross-polarization requirement contained in Section 25.215 of the Commission's rules, 47 C.F.R. § 25.215, IS GRANTED, with the condition that operation of the DIRECTV 9S

[67] Section 25.121 provides that licenses for DBS space stations licensed as broadcast facilities will be issued for a period of 8 years. Licenses for DBS space stations not licensed as broadcast facilities will be issued for a period of 10 years. 47 C.F.R. § 25.121.

DBS space station shall be coordinated with other potentially affected space stations, and shall operate on a non-harmful interference basis with respect to any DBS space stations that are in compliance with the cross-polarization isolation requirement. Further, DIRECTV shall not claim protection from interference from other DBS space stations to any greater extent than if the DIRECTV 9S DBS space station complied with Section 25.215 of the Commission's rules, 47 C.F.R. § 25.215.

29. IT IS FURTHER ORDERED that the Ka-band FSS DIRECTV 9S space station must be constructed, launched, and placed into operation in accordance with the technical parameters and terms and conditions of these authorizations by these specific time periods following the dates of authorization:

a. Execute a binding contract for construction by July 21, 2007.
b. Complete the Critical Design Review by July 21, 2008.
c. Commence construction by July 21, 2009.
d. Launch and begin operations by July 21, 2011.
e. DIRECTV Enterprises, LLC must file a bond with the Commission in the amount of $3 million, pursuant to the procedures set forth in Public Notice, DA 03-2602, 18 FCC Rcd 16283 (2003), as revised by Amendment of the Commission's Space Station Licensing Rules and Policies, *First Order on Reconsideration and Fifth Report and Order*, FCC 04-147, 19 FCC Rcd 12637 (2004), within 30 days of the date of this grant.

Failure to meet any of these dates shall render these authorizations null and void.

30. IT IS FURTHER ORDERED that, pursuant to Section 25.111(c) of the Commission's rules, 47 C.F.R. § 25.111(c), DIRECTV Enterprises, LLC shall provide the Commission with all information it requires in order to modify the Appendix 30 Broadcasting-Satellite Service Plans and associated Appendix 30A feeder-link Plans to incorporate the characteristics of the Direct Broadcast Satellite space station (Call Sign: S2669) of the DIRECTV 9S satellite, USABSS-21, in accordance with the ITU Radio Regulations. DIRECTV Enterprises, LLC shall be held responsible for all cost recovery fees associated with these ITU filings. We also note that no protection from interference caused by radio stations authorized by other administrations is guaranteed unless coordination and notification procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed and/or for which the necessary agreements under Appendices 30 and 30A have not been obtained may be subject to additional terms and conditions as required to effect coordination or obtain the agreement of other Administrations.

31. IT IS FURTHER ORDERED that, pursuant to Section 25.111(b) of the Commission's rules, 47 C.F.R. § 25.111(b), DIRECTV Enterprises, LLC shall prepare the necessary information, as may be required, for submission to the ITU to initiate and complete the advance publication, international coordination, due diligence, and notification process of the Fixed Satellite Service Ka-band space station (Call Sign: S2689) of the DIRECTV 9S satellite, in accordance with the ITU Radio Regulations. DIRECTV shall be held responsible for all cost recovery fees associated with these ITU flings. We also note that no protection from interference caused by radio stations authorized by other administrations is guaranteed unless coordination and notification procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which

coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other administrations.

32. IT IS FURTHER ORDERED that DIRECTV must coordinate all of its Ka-band downlink operations with Federal fixed-satellite service systems, both geostationary and non-geostationary, in accordance with footnote US334 to the Table of Frequency Allocations, 47 C.F.R. § 2.106. Absent a coordination agreement pursuant to footnote US334, DIRECTV shall operate its Ka-band downlinks on a non-harmful interference basis with regards to Federal systems in the 18.3-18.8 and 19.7-20.2 GHz bands and must terminate its Ka-band downlink operations immediately in the event that such operations cause harmful interference into operating Federal systems. In addition, DIRECTV must accept interference from such systems absent a coordination agreement pursuant to footnote US334.

33. IT IS FURTHER ORDERED that DIRECTV Enterprises, LLC has 30 days from the date of the release of this Order to decline these authorizations as conditioned. Failure to respond within that period will constitute formal acceptance of the authorizations as conditioned.

34. This Order is issued pursuant to Section 0.261 of the Commission's rules on delegations of authority, 47 C.F.R. § 0.261, and is effective upon release.

FEDERAL COMMUNICATIONS COMMISSION

Robert G. Nelson
Chief, Satellite Division
International Bureau