

**Before the
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Washington, DC 20230**

In the Matter of)
)
Implementation of the National Spectrum) 2023–26810
Strategy)

COMMENTS OF COMMERCIAL X-BAND USERS

Maxar Technologies Inc. (“Maxar”), Planet Labs PBC (“Planet”), Spire Global, Inc. (“Spire”), HawkEye 360, Inc. (“HawkEye 360”), The Tomorrow Companies Inc. (“Tomorrow.io”), ATLAS Space Operations, Inc. (“ATLAS”), Amazon Web Services, Inc. (“AWS”), Leaf Space LLC (“Leaf Space”), and Umbra Lab Inc. (“Umbra”) (together, the “Commercial X-band Users”) submit the following comments on the National Telecommunications and Information Administration’s (“NTIA”) notice of opportunity for public input (“Notice”)¹ on the implementation of the National Spectrum Strategy (“Strategy”).² The Commercial X-band Users agree that “demand for satellite-based services is exploding” and that “America’s security, safety, technological leadership, and economic growth depend, in no small measure, on sufficient access to spectrum.”³ This is certainly true for the commercial remote sensing industry and the Earth Exploration Satellite Service (“EESS”) spectrum it relies on. Commercial and federal remote sensing operations have an outsized impact on U.S. national defense, space situational awareness, and climate change research, among other growing sectors. As NTIA implements its Strategy and studies the 8025-8400 MHz portion of the X-band, it

¹ Nat’l Telecomm. & Info. Admin., *Implementation of the National Spectrum Strategy*, 88 Fed. Reg. 85266 (Dec. 7, 2023).

² The White House, *National Spectrum Strategy* (2023), available at <https://www.ntia.gov/report/2023/national-spectrum-strategy-pdf> (“National Spectrum Strategy”).

³ *Id.* at 4, 10.

should seek to protect the critical federal and non-federal EESS operations that utilize this irreplaceable spectrum.

I. COMMERCIAL REMOTE SENSING IS A VITAL PART OF THE U.S. SPACE INDUSTRY AND RELIES ON ACCESS TO ADEQUATE SPECTRUM RESOURCES.

The commercial remote sensing industry is a thriving and growing segment of the U.S. space industry and provides crucial services for governments, businesses, and more. Remote sensing encompasses any methods of imaging or gathering other data about the surface of the Earth from space, and its use cases are as diverse as the technologies it uses. From irreplaceable national security uses and climate monitoring to agricultural data gathering and monitoring shipping lanes and cargo, these operations affect massive swaths of the public and private sectors, military, and intelligence community, and provide data and imagery that are not accessible by other means. Demand for such services continues to grow, with an eightfold increase in the number of remote sensing satellites occurring between 2013 and 2022,⁴ and with U.S. revenue in remote sensing growing by approximately 50% between 2018 and 2022.⁵ The global remote sensing satellite industry is estimated to have a market size of \$16.12 billion in value in 2023, and sales are forecasted to grow at an 11.2% compound annual growth rate in the period between 2023 and 2032.⁶ Recent applications of remote sensing imagery include

⁴ Bryce Tech, Satellite Industry Association: State of the Satellite Industry Report 2023, at 23 (2023).

⁵ *Id.* at 28.

⁶ Market Research Future, Remote Sensing Satellite Market Research Report Information By System (SATCOM, Radar, EO/IR, Others), By Application (Earth Observation, Telecommunication, Meteorology, Mapping & Navigation, Others), By End-User (Defense, Commercial) And By Region (North America, Europe, Asia-Pacific, And Rest Of The World)—Market Forecast Till 2032 (2023).

monitoring the Ukraine war,⁷ tracking hurricane damage in Acapulco,⁸ and studying drought brought on by climate change in the Amazon.⁹

U.S. remote sensing companies, many of whom are signatories to these comments, are world leaders in the industry and continue to improve their remote sensing services, creating significant value across sectors. To both provide their existing services and continue to innovate new ones, remote sensing operators require reliable access to spectrum to downlink their data and imagery and share them with those who need it.

II. NTIA’S STUDY OF THE X-BAND MUST RECOGNIZE THE IMPORTANCE OF MAINTAINING 8025-8400 MHZ FOR CRITICAL COMMERCIAL AND FEDERAL REMOTE SENSING OPERATIONS.

A. The X-Band Is Necessary for Satellite Remote Sensing in Support of Civil, Commercial, and National Security Applications, as Well as Federal Use.

Limited spectrum is available for commercial remote sensing applications. Currently, some of the most heavily used spectrum allocated to EESS is in the upper portion of the X-band at 8025-8400 MHz. At least a dozen commercial satellite operators hold FCC authorizations in this band, and because this spectrum is also vital to federal operations, these operators are required by license condition to coordinate with the Air Force Spectrum Management Office (“AFSMO”), National Aeronautics and Space Administration (“NASA”), and National Oceanic and Atmospheric Administration (“NOAA”).¹⁰ In addition to the use cases described above for

⁷ *‘We are watching’*: How a satellite company helps expose scenes from the war in Ukraine, CNN (last accessed Dec. 12, 2023), <https://www.cnn.com/videos/business/2023/06/02/maxar-technologies-satellite-mission-ahead-contd-orig-zt-mc.cnn>.

⁸ Terry Castleman, *Stunning satellite images show the damage to Acapulco from Category 5 Hurricane Otis*, Los Angeles Times (Oct. 31, 2023), <https://www.latimes.com/california/story/2023-10-31/stunning-satellite-images-show-the-damage-to-acapulco-from-hurricane-otis>.

⁹ See Ana Ionova and Manuela Andreoni, *A Severe Drought Pushes an Imperiled Amazon to the Brink*, The New York Times (Oct. 17, 2023), <https://www.nytimes.com/2023/10/17/climate/amazon-rainforest-drought-climate-change.html>.

¹⁰ See 47 C.F.R. § 2.106 n.US258 (“In the bands 8025-8400 MHz and 25.5-27 GHz, the Earth exploration-satellite service (space-to-Earth) is allocated on a primary basis for non-Federal use. Authorizations are subject to a

commercial remote sensing, NASA and NOAA each have remote sensing operations that are key to their missions. NASA, for example, maintains an Earth observing fleet of 28 spacecraft, as well as the International Space Station,¹¹ and its data, much of which is “updated daily and [is] available within three hours of observation[,] . . . supports time-critical application areas such as wildfire management, air quality measurements, and flood monitoring.”¹² One mission, Surface Water and Ocean Topography (“SWOT”), which is a joint mission with the Centre National d’Études Spatiales (“CNES”), “will empower researchers and advance the way we manage fresh water and the effects of sea level rise across the globe,” as well as “provide critical information that communities can use to prepare for the impacts of a warming climate,” according to NASA Administrator Bill Nelson.¹³ NOAA owns or operates 17 satellites, including certain joint missions.¹⁴ For example, NOAA operates the Deep Space Climate Observatory alongside NASA and the Air Force, which monitors solar winds: without being able to issue warnings from this system, “space weather events—like geomagnetic storms—have the potential to disrupt nearly every major public infrastructure system on Earth, including power grids, telecommunications, aviation and GPS.”¹⁵ NOAA also operates the Defense Meteorological

case-by-case electromagnetic compatibility analysis.”); *see also, e.g.*, Maxar License Inc., Stamp Grant, ICFS File Nos. SAT-MOD-20210506-00060; SAT-AMD-20210802-00094; SAT-AMD-20210909-00120; SAT-AMD-20220107-00003, at ¶ 7 (Apr. 8, 2022) (“Transmissions of remote-sensing and telemetry data in the 8025-8400 MHz frequency band may only be made to earth stations coordinated with [AFSMO], [NASA], and [NOAA]. [Licensee] shall provide the FCC the list of coordinated earth stations.”).

¹¹ *See Earth Observing Fleet – Now*, NASA Scientific Visualization Studio (Dec. 11, 2023), <https://svs.gsfc.nasa.gov/5067>.

¹² *Worldview*, NASA Earth Data (June 3, 2022), <https://www.earthdata.nasa.gov/worldview>.

¹³ Jane Lee and Kathryn Hansen, *Water-Tracking Satellite Reveals First Views*, NASA Earth Observatory (Mar. 28, 2023), <https://earthobservatory.nasa.gov/images/151134/water-tracking-satellite-reveals-first-views>.

¹⁴ *Currently Flying*, NOAA National Environmental Satellite, Data, and Information Service (last visited Dec. 12, 2023), <https://www.nesdis.noaa.gov/current-satellite-missions/currently-flying>.

¹⁵ *DSCOVR: Deep Space Climate Observatory*, NOAA National Environmental Satellite, Data, and Information Service (last visited Dec. 12, 2023), <https://www.nesdis.noaa.gov/current-satellite-missions/currently-flying/dscovr-deep-space-climate-observatory>.

Satellite Program in partnership with the Air Force, which “provide[s] the military with important environmental information used in planning and conducting U.S. military operations worldwide and important weather data used to increase the timeliness and accuracy of weather forecasts around the globe.”¹⁶

As reflected above, these agencies operate joint missions, some of which are in cooperation with international partners. Thus, any domestic reallocation efforts of EESS bands like the upper portion of the X-band, in addition to having deleterious effects on these vital domestic uses, could also have a domino effect with respect to international use. The Strategy recognizes that in determining spectrum needs, NTIA will consider, among other things, “existing authorities and conformity to international allocations for similar applications,”¹⁷ and that the U.S. seeks to “maintain its place as a global technology leader.”¹⁸ It cannot do so if it repurposes spectrum key to domestic and international remote sensing satellite operations across the public and private sectors for terrestrial mobile use.

B. Terrestrial Wireless Broadband Use of the Upper X-Band Would Undermine Important Federal and Non-Federal EESS Services.

The Strategy recognizes that “demand for satellite-based services is exploding, with domestic firms filing license applications for constellations—some with tens of thousands of satellites—to support consumer broadband, in-space assembly and manufacturing, earth observation and imaging, cislunar activities, and a host of other uses,”¹⁹ and yet it also identifies

¹⁶ *Defense Meteorological Satellite Program*, NOAA National Environmental Satellite, Data, and Information Service (last visited Dec. 12, 2023), <https://www.nesdis.noaa.gov/current-satellite-missions/currently-flying/defense-meteorological-satellite-program>.

¹⁷ National Spectrum Strategy at 4.

¹⁸ *Id.* at 10.

¹⁹ *Id.* at 4.

the 7215-8400 MHz band to be studied for wireless broadband use.²⁰ In its description of the band, it acknowledges that “[t]here are . . . a variety of mission-critical Federal operations in this band (including . . . Earth Exploration Satellite . . . services) that will make it challenging to repurpose portions of the band while protecting incumbent users from harmful interference.”²¹ The Commercial X-band Users agree. Indeed, the band identified for study includes 1,275 megahertz of spectrum, and the EESS portion of the band—8025-8400 MHz—makes up less than a third of that; the disruption of both federal and non-federal operations would outweigh any benefit of an additional 375 MHz for mobile broadband use.

And such use would, indeed, be disruptive to those operations. Ground stations that receive EESS downlink data are highly sensitive to noise and would be particularly threatened by mobile broadband use, as mobile broadband operators tend to seek exclusive, high-powered operations.²² EESS downlinks, on the other hand, tend to use low power spectral density and rely on large gateway antennas that must operate at very low elevation angles. As a result, these ground stations are extremely susceptible to interference from terrestrial mobile systems operating at high duty cycles, even at levels that would not cause interference into other terrestrial systems. A sample X-band earth station license is included here as Appendix A for reference.

Moreover, EESS operations would be unusually difficult to protect or to repack. While commercial operations typically have discrete ground station locations, Federal operations in the

²⁰ *Id.* at 6.

²¹ *Id.*

²² *See, e.g.,* Meredith Attwell Baker, *More Licensed Spectrum Is Needed to Drive U.S. Innovation*, CTIA (Dec. 7, 2022), <https://www.ctia.org/news/more-licensed-spectrum-is-needed-to-drive-u-s-innovation> (“[T]hree blocks of lower mid-band spectrum (3.1-3.45, 4.4-4.94, 7.125-8.4 GHz) . . . if allocated to exclusive, licensed commercial use, at full power, could help us meet surging demand and achieve 5G’s full potential[.]”).

band include receive locations that change. The downlinks themselves are typically wideband transmissions in order to accommodate the imaging data, which, in combination with the ideal propagation characteristics of the X-band, would make it difficult to repack or migrate these operations.

For all these reasons, the upper 375 MHz of the X-band frequencies identified for study are not appropriate for mobile broadband use. Thus, NTIA should consider excluding this portion of the identified band from the initial study. If NTIA includes this 375 MHz as part of its study, it must identify ways to examine impact not only on federal operations in the band, but also on co-primary non-federal operations, including by allowing commercial operators in the band to participate in the study process. Currently, the Strategy states that “certain planning components are needed immediately . . . to monitor the success of study and repurposing efforts, including the impact on the mission effectiveness of Federal incumbents in the bands selected for in-depth study.”²³ But this is not sufficient in bands, like the upper X-band, that include mission-critical non-federal incumbents such as the Commercial X-band Users. As such, a more fulsome and accurate study of the band requires the participation of private sector operators, particularly as it pertains to acquiring accurate information regarding 1) the technical characteristics of non-federal operations, and 2) the protection criteria required to ensure non-federal operations are not subject to harmful interference. While NTIA does not have direct regulatory authority over non-federal spectrum use, it must consider the importance and protection of that use when it studies spectrum bands with co-primary non-federal allocations for potential repurposing.

²³ Strategy at 7.

III. CONCLUSION.

The Commercial X-band Users agree that “[t]he Nation must have forward-looking, robust decision-making based on a full understanding of the operational impacts of allocation decisions, including the risks and benefits of additional spectrum access.”²⁴ As such, the Commercial X-band Users encourage NTIA to exclude the upper X-band from study. If NTIA must move forward to study this specific 375 MHz for mobile broadband, that study must fully consider the operational impacts on both federal and non-federal EESS operations of any reallocation of the upper X-band.

Respectfully submitted,

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²⁴ *Id.* at 11.

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January 2, 2024

APPENDIX A



UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
RADIO STATION AUTHORIZATION

Current Authorization : FCC WEB Reproduction
 Unofficial Copy

Name: MAXAR LICENSE INC.

Call Sign: E120040
File Number: SES-MOD-20160524-00450

Authorization Type: Modification of License
Non Common Carrier **Grant Date:** 09/13/2016 **Expiration Date:** 06/05/2027

Nature of Service: Earth Exploration Satellite Service

Class of Station: Fixed Earth Stations

A) Site Location(s)

#	Site ID	Address	Latitude	Longitude	Elevation (Meters)	NAD	Special Provisions (Refer to Section H)
1)	1	213 PURPLE SAGE ROAD ROCK SPRINGS, SWEETWATER, WY, 82901	41° 32' 12.0" N	109° 21' 11.0" W	1889.8	83	

Subject to the provisions of the Communications Act of 1934, The Communications Satellite Act of 1962, subsequent acts and treaties, and all present and future regulations made by this Commission, and further subject to the conditions and requirements set forth in this license, the grantee is authorized to construct, use and operate the radio facilities described below for radio communications for the term beginning Tuesday, June 05, 2012 (3 AM Eastern Standard Time) and ending Saturday, June 05, 2027 (3 AM Eastern Standard Time). The required date of completion of construction and commencement of operation is Wednesday, September 13, 2017 (3 AM Eastern Standard Time). Grantee must file with the Commission a certification upon completion of construction and commencement of operation.

B) Particulars of Operations

The General Provision 1010 applies to all receiving frequency bands.
 The General Provision 1900 applies to all transmitting frequency bands.
 For the text of these provisions, refer to Section H.

#	Frequency	Polarization	Emission	Tx/Rx Mode	Max EIRP /Carrier	Max EIRP Density	Associated Antenna	Special Provisions (Refer to Section H)	Modulation/ Services
1)	8393.7015 - 8394.2985	R	59K7G1D	R			1	QPSK, TELEMETRY	
2)	8385.9400 - 8386.0600	R	120KG1D	R		0.00	1	QPSK, TELEMETRY	
3)	8380.0000 - 8380.0000	L	5M80G7D	R			1	Digital telemetry TT&C	
4)	8377.1000 - 8382.9000	L	5M80G7D	R			1	DIGITAL TELEMETRY (TT&C)	
5)	8345.6800 - 8346.3200	R	64K0G1D	R			1	QPSK, TELEMETRY	
6)	8135.0000 - 8285.0000	L,R	150MG7D	R		0.00	1	QPSK, DATA	
7)	8028.0000 - 8032.0000	R	4M00G7D	R			1	QPSK, DATA	
8)	8025.0000 - 8400.0000	L,R	375MG7D	R			1	QPSK, DATA	
9)	8025.0000 - 8395.0000	L,R	370MG7D	R			1	QPSK, DATA	
10)	8025.0000 - 8375.0000	L,R	350MG7D	R			1	Digital Earth imaging data reception	
11)	8025.0000 - 8375.0000	L,R	350MG7D	R			1	QPSK, DATA	
12)	8025.0000 - 8345.0000	R	320MG7D	R		0.00	1	QPSK, DATA	
13)	2092.6000 - 2092.6000	R	NON	T	61.00	61.00	1		
14)	2091.9400 - 2093.2600	R	1M32G1D	T	61.00	49.00	1	BPSK (TT&C)	
15)	2085.6875 - 2085.6875	R	1M32G1D	T	51.80	27.70	1	516 Kbit BPSK digital TT&C	



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16) 2085.0275 - 2086.3475	R	1M32G1D	T	61.00	49.00	1	BPSK (TT&C)
17) 2052.0000 - 2052.0000	R	NON	T	61.00	61.00	1	
18) 2051.6600 - 2052.3400	R	68K0G2D	T	61.00	61.00	1	BPSK (TT&C)
19) 2051.3400 - 2052.6600	R	1M32G1D	T	61.00	49.00	1	BPSK (TT&C)
20) 2042.0000 - 2042.0000	R	NON	T	61.00	61.00	1	
21) 2041.6600 - 2042.3400	R	68K0G2D	T	61.00	61.00	1	BPSK (TT&C)

C) Frequency Coordination

#	Frequency Limits(MHz)	Satellite Arc (Deg. Long.)		Elevation (Degrees)		Azimuth (Degrees)		Max EIRP Density toward Horizon (dBW/4kHz)	Associated Antenna(s)
		East Limit	West Limit	East Limit	West Limit	East Limit	West Limit		
1)	2085.6875 - 2085.6875	NGSO		5.0 - 5.0		0.0 - 360.0		-4.3	1
2)	8025.0000 - 8375.0000	NGSO		5.0 - 5.0		0.0 - 360.0			1
3)	8025.0000 - 8400.0000	NGSO		5.0 - 5.0		- 360.0		-4.3	1
4)	2041.6600 - 2093.2600	NGSO		5.0 - 5.0		- 360.0		-4.3	1
5)	8385.9400 - 8386.0600	NGSO		5.0 - 5.0		- 360.0			1

D) Point of Communications

The following stations located in the Satellite orbits consistent with Sections B and C of this Entry:

- 1 to Worldview-1 (S2129) NGSO satellite (U.S.-licensed) (506 x 521 km @ 97.36° Incln)
- 1 to Worldview-2 (S2129) NGSO satellite (U.S.-licensed) (795 - 780 km @ 98.5° Incln)
- 1 to GeoEye 1 (S2348) NGSO satellite (U.S.-licensed)
- 1 to Worldview-3 (S2129) NGSO satellite (U.S.-licensed) (626 x 642 km @ 97.988° Incln)
- 1 to Worldview-4 (S2348) NGSO satellite (U.S.-licensed)[425 x 525 km @ 97° Incln)
- 1 to Worldview- Legion Blocks 1 & 2 (S2129) NGSO satellite (U.S.-licensed) (450-870 km @ 98.48° & 45° Incln)

E) Antenna Facilities

Site ID	Antenna ID	Units	Diameter (Meters)	Manufacturer	Model Number	Site Elevation	Max Antenna Height (Meters)	Special Provisions (Refer to Section H)
1	1	1	7.3	ViaSat	3420	1889.76	5.0 AGL/ 1894.0 AMSL	

Max Gains(s):41.0 dBi @ 2.0850 GHz 53.5 dBi @ 8.2000 GHz

Maximum total input power at antenna flange (Watts) = 100.0

Maximum aggregate output EIRP for all carriers (dBW)61.0

F) Remote Control

1	1601 DRY CREEK DRIVE SUITE 260 LONGMONT, BOULDER, CO, 80503 303-684-4587	Call Sign:	N/A
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G) Antenna Structure marking and lighting requirements:

None unless otherwise specified under Special and General Provisions

H) Special and General Provisions

A) This RADIO STATION AUTHORIZATION is granted subject to the following special provisions and general conditions:

- 1010 Applicable to all receiving frequency bands. Emission designator indicates the maximum bandwidth of received signal at associated station(s). Maximum EIRP and maximum EIRP density are not applicable to receive operations.

- 1900 Applicable to all transmitting frequency bands. Authority is granted to transmit any number of RF carriers with the specified parameters on any discrete frequencies within associated band in accordance with the other terms and conditions of this authorization, subject to any additional limitations that may be required to avoid unacceptable levels of inter-satellite interference.

- 2300 Authority is granted to operate this station by remote control provided that: (1) the parameters of the transmissions of this station monitored at the remote control point, and the operational functions sufficient to ensure that the operations of this station are in full compliance with the station authorization at all times; (2) upon detection by the grantee, or upon notification from the Commission, of a deviation of the operation of this station, transmissions shall be immediately suspended until the deviation is corrected, except that transmissions concerning the immediate safety of life or property may be conducted for the duration of such emergency; and (3) the grantee shall have available, at all times, the technical personnel necessary to perform the technical servicing and maintenance of this station expeditiously. See also Public Notice "The International Bureau Provides Guidance Concerning the Relocation of Earth Station Remote Control Points", DA 06-978 (rel. May 4, 2006).

- 2916 Transmitter(s) must be turned off during antenna maintenance to ensure compliance with the FCC-specified safety guidelines for human exposure to radiofrequency radiation in the region between the antenna feed and the reflector. Appropriate measures must also be taken to restrict access to other regions in which the earth station's power flux density levels exceed the specified guidelines.

- 3219 All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the Commission's radiofrequency (RF) exposure guidelines, pursuant to Section 1.1307(b)(1) through (b)(3) of the Commission's rules, or if not in compliance, file an Environmental Assessment (EA) as specified in Section 1.1311. See 47 CFR § 1.1307 (b) (5).

- 3850 As a secondary user of the frequency band, licensee shall not cause harmful interference to primary services in the frequency band and it can not claim protection from harmful interference from primary services in the frequency band.



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H) Special and General Provisions

B) This RADIO STATION AUTHORIZATION is granted subject to the additional conditions specified below:

This authorization is issued on the grantee's representation that the statements contained in the application are true and that the undertakings described will be carried out in good faith.

This authorization shall not be construed in any manner as a finding by the Commission on the question of marking or lighting of the antenna system should future conditions require. The grantee expressly agrees to install such marking or lighting as the Commission may require under the provisions of Section 303(q) of the Communications Act. 47 U.S.C. § 303(q).

Neither this authorization nor the right granted by this authorization shall be assigned or otherwise transferred to any person, firm, company or corporation without the written consent of the Commission. This authorization is subject to the right of use or control by the government of the United States conferred by Section 706 of the Communications Act. 47 U.S.C. § 706. Operation of this station is governed by Part 25 of the Commission's Rules. 47 C.F.R. Part 25.

This authorization shall not vest in the licensee any right to operate this station nor any right in the use of the designated frequencies beyond the term of this license, nor in any other manner than authorized herein.

This authorization is issued on the grantee's representation that the station is in compliance with environmental requirements set forth in Section 1.1307 of the Commission's Rules. 47 C.F.R. § 1.1307.

This authorization is issued on the grantee's representation that the station is in compliance with the Federal Aviation Administration (FAA) requirements as set forth in Section 17.4 of the Commission's Rules. 47 C.F.R. § 17.4.

The following condition applies when this authorization permits construction of or modifies the construction permit of a radio station.

This authorization shall be automatically forfeited if the station does not meet each required construction deadline by the required date of completion unless, before such date(s), a specific application is timely filed to request an extension of the construction deadline(s), supported with good cause why that failure to construct by the required date was due to factors not under control of the grantee.

Licensees are required to pay annual regulatory fees related to this authorization. The requirement to collect annual regulatory fees from regulates is contained in Public Law 103-66, "The Omnibus Budget Reconciliation Act of 1993". These regulatory fees, which are likely to change each fiscal year, are used to offset costs associated with the Commission's enforcement, public service, international and policy and rulemaking activities. The Commission issues a Report and Order each year, setting the new regulatory fee rates. Receive only earth stations are exempt from payment of regulatory fees.