

REQUEST OF MCI COMMUNICATIONS SERVICES, LLC

MCI Communications Services, LLC (“MCI”), pursuant to Section 25.120 of the Commission’s rules, hereby respectfully requests special temporary authority (“STA”) for a period of 60 days beginning no later than December 1, 2020, to operate two 2.4m AvL earth station antennas in Window Rock, Arizona (“WR 2.4m Earth Station”) that will communicate with O3b Limited’s (“O3b”) non-geostationary satellite orbit (“NGSO”) Fixed-Satellite Service (“FSS”) system, which is authorized to serve the U.S. market.¹ MCI intends to file a request for permanent authorization at this location once the Comsearch frequency coordination report is finalized.

Public Interest Showing

The COVID-19 crisis has presented the Navajo Nation with unique telecommunications challenges, and access to connectivity services such as remote telehealth and distance learning is critical to maintaining safety during the pandemic.² Grant of this STA would align with the Commission’s clear intent to promote broadband access and support telehealth

¹ *O3b Limited*, Order and Declaratory Ruling, 33 FCC Rcd 5508 (2018) (“O3b Market Access Grant”).

² Christina Rodriguez, *Navajo Nation Reports 17 New COVID-19 Cases, 4 Additional Deaths*, KOB4 (Aug. 19, 2020), <https://www.kob.com/new-mexico-news/navajo-nation-reports-17-new-covid-19-cases-4-additional-deaths/5832710/>; *Navajo Nation Council Resolution CJY-67-20 broadband and telecommunications expenditures signed into law for \$53,224,989*, The 24TH Navajo Nation Council Office of the Speaker (August 17, 2020), https://mcusercontent.com/3341677ced70eee20b6a79473/files/3d6d4f73-bad6-43ff-8053-99d8c99ee7f6/PDF_Navajo_Nation_Council_Resolution_CJY_67_20_broadband_and_telecommunications_expenditures_signed_into_law_for_53_224_989_PR.pdf?utm_source=PRESS+RELEASEs&utm_campaign=41db148074-EMAIL_CAMPAIGN_2020_08_17_09_42&utm_medium=email&utm_term=0_c3fb2c8cdc-41db148074-17163325.

efforts relating to COVID-19 throughout the Navajo Nation.³ Additionally, granting this STA will serve the public interest because the WR 2.4m Earth Station will be used to augment an array of critical connectivity services for the Navajo Nation, such as distance learning, support for telemedicine operations, and fire and emergency situational awareness.⁴

Frequency Plan

The WR 2.4m Earth Station will communicate with O3b's NGSO system using the following frequencies:

- 27.6-28.4 GHz and 28.6-29.1 GHz (uplink)
- 17.8-18.6 GHz and 18.8-19.3 GHz (downlink)

The WR 2.4m Earth Station antennas will be mounted on fixed platforms.

Although the pointing angle of the antennas will change as O3b's NGSO satellites are tracked, each platform will remain stationary. MCI's proposed WR 2.4m Earth Station operations in

³ "Through the Federal Communications Commission's COVID-19 Telehealth Program ... the Navajo Nation Department of Health, based in Window Rock, AZ, was awarded \$954,990 to provide home healthcare and RPM services throughout the Navajo Nation." Eric Wicklund, *Community Centers, Navajo Nation Get FCC Funding for Telehealth Services*, Telehealth News (May 6, 2020), <https://mhealthintelligence.com/news/community-centers-navajo-nation-get-fcc-funding-for-telehealth-services>; see also COVID-19 Telehealth Program, Final List of COVID-19 Telehealth Program Awardees (July 8, 2020), <https://www.fcc.gov/covid-19-telehealth-program>; FCC Grants Navajo Nation Temporary Spectrum Access During Pandemic (April 17, 2020), <https://www.fcc.gov/document/fcc-grants-navajo-nation-temporary-spectrum-access-during-pandemic>.

⁴ "[A] deal is underway with Verizon to bring internet, via satellite, to tribal members in every region. The nation spans across Utah, New Mexico and Arizona. Bringing internet to the entire nation will be good for economic recovery and create small business opportunities...Bringing widespread internet access will be good for future generations[.]" Christina Flores, *Lawmakers to give \$3.9 million in COVID-19 relief to internet for Navajo School Kids*, KUTV (Aug. 18, 2020), <https://kutv.com/news/local/lawmakers-to-give-39-million-in-covid-19-relief-to-internet-for-navajo-school-kids>.

shared bands are consistent with the Commission’s rules and policies. MCI addresses each of these bands below.

Uplink

27.6-28.35 GHz – Sharing with primary terrestrial stations

In the 27.6-28.35 GHz band, the Upper Microwave Flexible Use Service (“UMFUS”) has a primary allocation, and FSS operations are permitted on a secondary basis. Pursuant to Section 25.136(a), an earth station licensee may be authorized to operate in this band without providing interference protection to future UMFUS stations if certain requirements are met.⁵ Attachment B to this application demonstrates that the WR 2.4m Earth Station will meet all the criteria of Section 25.136(a)(4).

On October 27, 2020, Comsearch submitted a frequency coordination notice on behalf of MCI to all existing terrestrial licensees within the coordination contours of the Window Rock Earth Station. Once the final report is issued, MCI will file a permanent earth station license application with the Comsearch report attached as an exhibit. Cellco Partnership (“Verizon”), one of the UMFUS license holders for the area surrounding Window Rock in the 27.6-28.35 GHz frequency range, has already consented to MCI’s use of these frequencies to provide this service, as shown in Attachment C.

27.6-28.4 GHz - Sharing with primary GSO FSS operators

NGSO FSS systems are required to protect geostationary orbit (“GSO”) FSS systems throughout the 27.6-28.4 GHz band. Both NGSO and GSO FSS systems are secondary to UMFUS in the 27.6-28.35 GHz band, but the Commission has also specified that NGSO FSS

⁵ 47 C.F.R. § 25.136(a). *See also Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014 (2016) at Appendix A.

systems in this band must operate on an unprotected, non-interference basis with respect to GSO FSS networks.⁶ In the 28.35-28.4 GHz band, there is a primary allocation for GSO FSS systems and a secondary allocation for NGSO FSS systems.⁷

The Commission granted O3b U.S. market access in Ka-band uplink spectrum in which GSO FSS has priority status based on O3b's demonstration that its NGSO operations are not likely to cause harmful interference to GSO networks,⁸ and subject to conditions specifying that the O3b operations are not entitled to protection from interference caused by GSO systems.⁹ MCI's request to operate the WR 2.4m Earth Station in the 27.6-28.4 GHz band segment is consistent with these provisions and other applicable Commission requirements.

Pursuant to Sections 25.115(f)(1) and 25.146(a)(2) of the Commission's rules, MCI hereby certifies that the earth station operations proposed herein will comply with the applicable equivalent power flux-density ("EPFD") levels in Article 22, Section II, and Resolution 76 of the ITU Radio Regulations. The Commission has recognized that any NGSO system that complies with these international EPFD limits "is considered as having fulfilled its obligation . . . not to cause unacceptable interference to any GSO network."¹⁰ Moreover, MCI

⁶ *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 7809 (2017) (the "NGSO Order") at 7817, ¶ 23 and Appendix B, Adopted Ka-band Plan.

⁷ *See id.*, Appendix B, Adopted Ka-band Plan.

⁸ *See, e.g.*, IBFS File No. SAT-AMD-20161115-00116 (the "O3b Amendment"), Technical Annex at 13-19.

⁹ *See* O3b Market Access Grant, 33 FCC Rcd at 5514, ¶¶ 13-16 and 5525, ¶ 46.

¹⁰ NGSO Order, 32 FCC Rcd at 7820, ¶ 32 (footnote omitted). *See also* 47 C.F.R. § 25.289.

will not claim protection from interference from U.S.-licensed GSO FSS networks in the 27.6-28.4 GHz spectrum.

Downlink

17.8-18.6 GHz – Sharing with primary FS and GSO FSS operators and with other NGSO operators

The 17.8-18.3 GHz band is allocated on a primary basis to the terrestrial fixed service (“FS”) and on a secondary basis to FSS.¹¹ The 18.3-18.6 GHz band is allocated in the United States on a primary basis to GSO FSS and on a secondary basis to NGSO FSS. O3b’s space stations transmit in this band pursuant to the O3b Market Access Grant, and the operations of the space stations with the WR 2.4m Earth Station will comply with the conditions specified in that authorization.¹²

Conclusion

The requested STA will allow MCI to provide critical connectivity services throughout the Navajo Nation. Accordingly, and for good cause shown, MCI respectfully requests that its STA be granted in time for it to commence operation under this 60-day STA on December 1, 2020.

¹¹ NGSO Order, 32 FCC Rcd at 7812, ¶¶ 7-8, and 7850, Appendix B.

¹² O3b Market Access Grant, 33 FCC Rcd at 5525-26, ¶ 46.

Attachment A: Technical Information

Site Details

Contact Information:

Gary Neiryneck
972-578-7114

Address:

Navajo Nation Division of Community Development Building
Administration Building #2
Window Rock Blvd
Window Rock, AZ 86515

Geographic Coordinates:

35° 40' 29.6" N
109° 3' 26.61" W

Antenna Specifications

Manufacture/Model: AvL Technologies, 2470 2.4m

Antenna Size: 2.4m

Antenna Gain Transmit/Receive: 51 dBi at 18.5 GHz, 54.5 dBi at 28.3 GHz

Height Above Ground Level: 5 meter

Height Above Sea Level: 2,200 meters

Total Input Power at the Flange: 40 watts

Total EIRP for All Carriers: 70 dBW

Emission Designators: 1M00G7D, 216MG7D

Attachment B: Compliance with 47 C.F.R. § 25.136(a)(4)

Section 25.136 of the Commission's rules defines conditions that, if met, permit an earth station licensee to operate in accordance with the terms of its authorization without providing interference protection to Upper Microwave Flexible Use Service ("UMFUS") stations in the 27.5-28.35 GHz band.¹ The International Bureau has provided guidance to applicants on how to show compliance with the rule's specifications.² The following analysis demonstrates that the Window Rock Earth Station meets all the requirements of Section 25.136(a)(4).

§ 25.136(a)(4)(i)

The Window Rock Earth Station will be located just outside of the Navajo Nation Division of Community Development building in Window Rock, Apache County, Arizona. This site complies with Section 25.136(a)(4)(i), which states that an earth station can avoid the obligation to provide interference protection to UMFUS licensees only if the county where it is located contains no more than two other earth stations that are exempt from UMFUS protection requirements under Section 25.136(a). MCI has searched the International Bureau's IBFS database and determined that there are currently no earth stations in Apache County licensed to operate in the 27.5-28.35 GHz band.

§ 25.136(a)(4)(ii)

Consistent with the Commission's Rules and the Siting Guidance Notice, MCI has calculated the area within which the aggregate power flux density ("PFD") for MCI's proposed antenna at the site is equal to or exceeds $-77.6 \text{ dBm/m}^2/\text{MHz}$. According to the 2010 census, Apache County has a population of 71,517.³ As a result, the population within this PFD contour must be less than 450 to meet the relevant condition established in Section 25.136(a)(4)(ii) of the Commission's rules.⁴ MCI has determined that with shielding the contour satisfies that condition, as the total population affected is 376.

The PFD contour also includes part of McKinley County, New Mexico. The 2010 census indicates that McKinley County has a population of 71,492.⁵ MCI has determined that with

¹ See 47 C.F.R. § 25.136(a)(4).

² International Bureau Issues Guidance on Siting Methodologies for Earth Stations Seeking to Operate in the 24.75-25.25 GHz, 27.5-28.35 GHz, 37.5-40 GHz, 47.2-48.2 GHz, and 50.4-51.4 GHz Frequency Bands to Demonstrate Compliance with Section 25.136, IB Docket No. 17-172, Report No. SPB-281, DA 20-631 (rel. June 16, 2020) (the "Siting Guidance Notice").

³ See QuickFacts Apache County, Arizona, United States Census Bureau, available at: <https://www.census.gov/quickfacts/apachecountyarizona>.

⁴ 25.136(a)(4)(ii), Table 1.

⁵ See QuickFacts McKinley County, New Mexico, United States Census Bureau, available at: <https://www.census.gov/quickfacts/fact/table/mckinleycountynewmexico,apachecountyarizona/PST045219>.

shielding the total population affected is 6, satisfying the conditions of Section 25.136(a)(4)(ii).⁶ The earth station parameters used to calculate the aggregate PFD contour are shown in the following table.

Parameter	Earth Station
Latitude	35° 40' 29.60" N.L.
Longitude	109° 3' 26.61" W.L.
Antenna Size	2.4 meters
EIRP Density	23.92 dBW/4 kHz
Antenna Pattern	Measured gain pattern
Min. Elev. Angle	10 degrees

In this analysis, MCI has assumed the ITU-R P.452 propagation model and used 1 arc second resolution USGS Digital Terrain Elevation Data (“DTED”). Moreover, MCI conducted a clutter analysis considering obstacles surrounding the site. The analysis takes into account obstruction that exists adjacent to the western side of the antenna. The obstruction consists of a row of shipping containers stacked on top of each other, creating an obstacle that is 3.9 meters in height. The following picture shows, highlighted in yellow, the containers on top of which same-size containers will be stacked.



Figure 1: Area where containers will be stacked

⁶ 25.136(a)(4)(ii), Table 1.



Figure 2: Picture of obstacles surrounding the antenna that were considered in the clutter analysis

The analysis considers the full range of antenna pointing angles necessary to communicate with the O3b equatorial satellites.

MCI developed the PFD contour for this site using the earth station parameters identified above. The resulting contour is shown in blue on the map in Figure 3 on the following page. Figure 4 is a zoom of the PFD contour in the immediate surroundings of the Division of Community Development building. In addition, MCI is attaching to this application the contour in KML file format (as shown in Figure 3 below), as suggested by the Siting Guidance Notice. The KML file shows the PFD contour and identifies the affected census blocks with their respective Block IDs. Moreover, a line delimiting the border between the two counties was added.

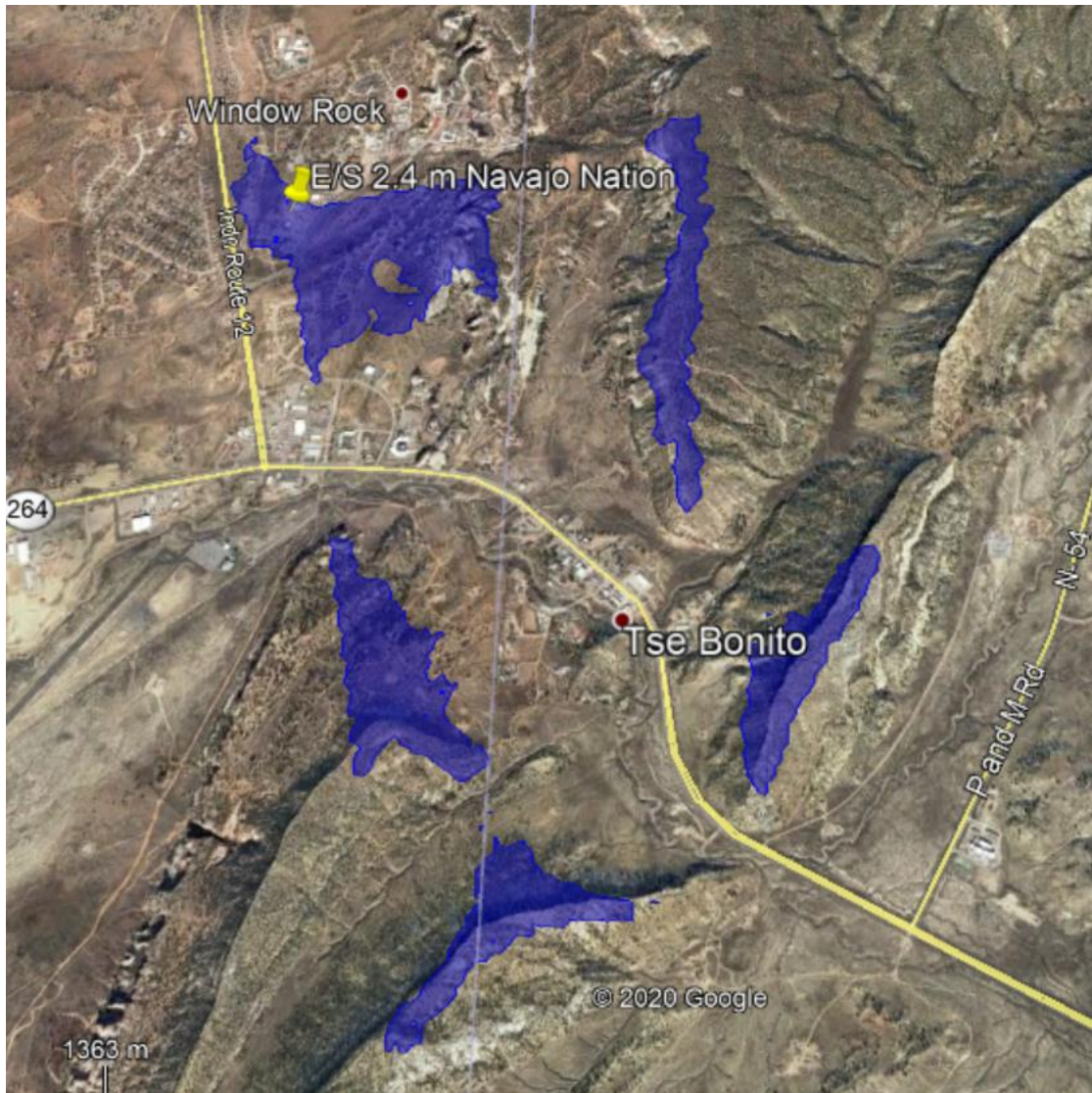


Figure 3: PFD Contour full view

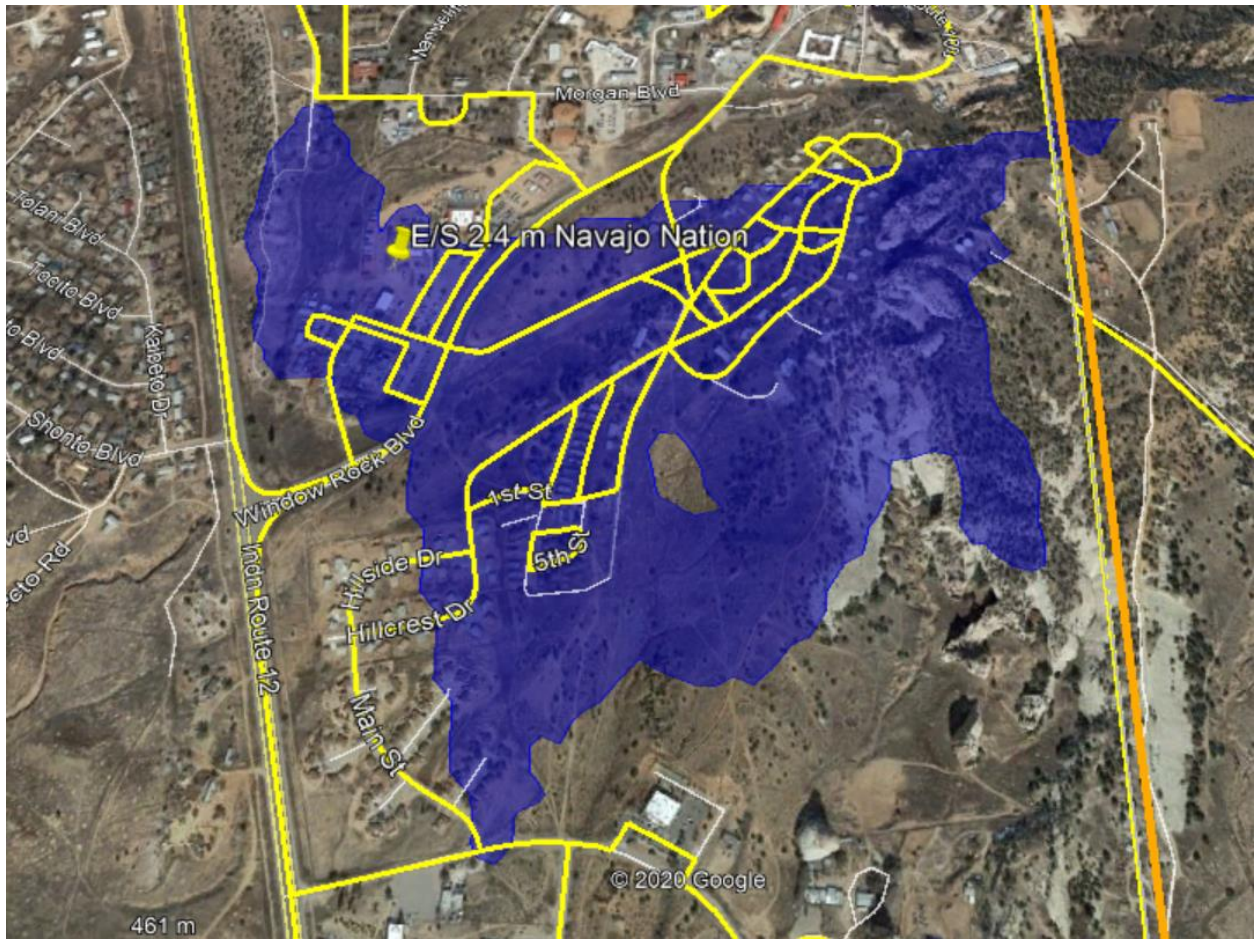


Figure 4: Zoom on Navajo Nation area PFD contour and census blocks

The population data for each census block is from the 2010 U.S. census data. The actual area method was used to assess how many people in a given census block are within the PFD contour. By these calculations, MCI determined that the PFD contour of the Window Rock Earth Station affects 376 people in Apache County, Arizona, and 6 people in McKinley County, New Mexico. These values comply with the population limits in Section 25.136(a)(4)(ii).

§ 25.136(a)(4)(iii)

The Window Rock Earth Station will conform to the limitations in Section 25.136(a)(4)(iii). MCI has performed a search on the FHWA HEPGIS portal⁷ and has confirmed that roads that intersect the Window Rock Earth Station's PFD contour are not designated as Other Freeways and Expressways, or Other Principal Arterials. Additionally, there are no major event venues, passenger railroads and cruise ship ports within the contour. As a result, the Earth station satisfies the requirements of Section 25.136(a)(4)(iii).

§ 25.136(a)(4)(iv)

Finally, MCI has complied with Section 25.136(a)(4)(iv) for the Window Rock Earth Station. That rule specifies that the earth station applicant must successfully complete coordination within its relevant PFD contour with respect to any "existing facilities constructed and in operation by the UMFUS licensee."⁸ Comsearch has submitted a frequency coordination notice on behalf of MCI to all existing terrestrial licensees within the coordination contours of the Window Rock Earth Station. Once the final report is issued, MCI will file a permanent earth station license application with the Comsearch report attached as an exhibit. The Commission's Universal Licensing System shows that Cellco Partnership ("Verizon") is the UMFUS license holder for Window Rock, AZ in the 27.6-28.35 GHz frequency range. As shown in Attachment C, Verizon consents to MCI's use of these frequencies to provide this service.

⁷ See U.S. Department of Transportation, Federal Highway Administration, National Highway System map. Available at: <https://hepgis.fhwa.dot.gov/fhwagis/>. MCI also consulted relevant state sources for Arizona and New Mexico.

⁸ 47 C.F.R. § 25.136(a)(4)(iv).