



A Consultation Paper on **Sharing Broadband Satellite Spectrum**

Inviting public comment and input

September 18th 2026

INTRODUCTION

- 1 The Telecommunication Regulation Authority (TRA) **is seeking your feedback** on whether we should allow fixed broadband non-geostationary orbit (**NGSO**) satellite licensees to exceed the equivalent power flux density (**EPFD**) limits set out in Tables 22-1A through 22-1E of Article 22 of the International Telecommunications Union (**ITU**) Radio Regulations.
- 2 The purpose of making this change would be to establish the conditions for fixed broadband NGSO satellite licensees improving the services they provide to customers in the FSM.
- 3 The purpose of this consultation is to gather and consider public comments, so we can consider stakeholders' views before we decide whether, and how, to make this change.

CONSULTATION FEEDBACK INFORMATION

- 4 The TRA invites written comments and feedback on this consultation document. We have provided a comments form for responses, which can be found in **Attachment 1**.
- 5 Responses may be submitted in person at TRA's offices in Pohnpei, or sent to consultations@tra.fm. Responses are due by **October 17th 2026**.
- 6 Submissions will be made public, unless there is a specific request for confidentiality made under Section 322 of the Act.¹
- 7 We provide a list of consultation questions at the end of this document to help organize responses, and for us to receive feedback on specific issues.
- 8 After receiving feedback, we will publish the submissions, and our response to submissions which will state our views and reasons for either making changes or maintaining our initial views.
- 9 We intend to produce a draft decision by the end of December 2026. This will include a draft of the actual written determination we intend to issue. The current consultation provides an opportunity for licensees and members of the general public to provide feedback before the scope of the proposed decision, if any, is finalized and the draft written determination is produced. We will consult on the proposed draft decision and draft written determination before we make a final decision.

BACKGROUND

- 10 The objectives of the FSM Telecommunications Act of 2014 (**the Act**) include "*promoting the long-term interests of users,*"² "*providing conditions for effective competition among service providers in the Federated States of Micronesia and encouraging efficient and sustainable investment in and use of communications networks and services,*"³ "*promoting the effective and efficient use of the radio frequency spectrum,*"⁴ and "*extending access to*

¹ See the comments form (Attachment 1) for details.

² Section 303(1)(a) of the Act.

³ Section 303(1)(c) of the Act.

⁴ Section 303(1)(h) of the Act.

communications services to all persons in the Federated States of Micronesia, to the greatest extent reasonable in the circumstances.”⁵

- 11 Our functions and powers under the Act include the powers to *“specify the technical standards and procedures for ... the operation of communications networks, and the provision of communications services,”⁶ “manage the radio frequency spectrum required to provide communications services,”⁷ and “undertake consultations on matters relating to communications.”⁸*
- 12 In the exercise of our powers, we are required to ensure that spectrum is managed and used in a manner that is (a) open, non-discriminatory, competitively neutral, objective and transparent; (b) consistent with any applicable international treaties, commitments, recommendations or standards legally binding on the FSM; and (c) economically efficient and permits evolution to new technologies and services.⁹
- 13 We are now considering whether we should exercise those powers to authorize fixed broadband NGSO satellite licensees to exceed the single-entry EPFD limits in Tables 22-1A through 22-1E of Article 22 of the ITU Radio Regulations, subject to agreed operational conditions and parameters, for the 10.7-12.7 GHz, 17.8-18.6 GHz, and 19.7-20.2 GHz bands.

SPECTRUM SHARING BY BROADBAND SATELLITE SYSTEMS

- 14 Geostationary and non-geostationary broadband satellite systems share certain global spectrum bands to provide services to their customers. These include the 10.7-12.7 GHz, 17.8-18.6 GHz, and 19.7-20.2 GHz bands, which are used, for example, for fixed-satellite services (e.g. broadband connectivity) and broadcast-satellite services. When multiple satellite systems use the same spectrum in the same area, this raises the risk that the operation of those satellite systems might interfere with each other.
- 15 In order to manage the risk that fixed broadband NGSO satellite systems interfere with geostationary orbit (**GSO**) satellite systems, the ITU developed a set of rules in Article 22 of the Radio Regulations that restrict the operations of those NGSO systems. In summary, the single-entry EPFD limits in Tables 22-1A to 22-1E of Article 22 of the Radio Regulations establish the maximum power that an NGSO satellite system can produce at a receiving earth station or space station of a GSO satellite system. NGSO satellite system operators comply with these limits by restricting the power with which an NGSO system can broadcast, limiting the number of satellites from the NGSO system that can operate in a given geographic area, and restricting the NGSO system’s operations within a certain distance of the transmission path of a GSO satellite.
- 16 The purpose of the rules in Article 22 is to protect GSO operations from harmful interference. We support this objective.

⁵ Section 303(1)(i) of the Act.

⁶ Section 305(e) of the Act.

⁷ Section 305(i) of the Act.

⁸ Section 305(n) of the Act.

⁹ Section 332(3) of the Act.

- 17 The effect of these rules, however, is to limit the capacity and availability of the NGSO operations, and therefore the ability of those NGSO satellite systems to serve customers, in any given geographic area. If these rules are more restrictive than necessary to protect GSO systems, a case can be made for revising them.
- 18 The ITU's single-entry EPFD limits were developed in the late 1990s based in part on certain assumptions made about the expected development of NGSO satellite systems. Some parties consider that these limits no longer reflect the actual operations of satellite systems today, that they are overly conservative, and that other rules could protect GSO operations as effectively, but without imposing unduly rigid restrictions on NGSO operations.
- 19 Work is ongoing at the ITU to update these single-entry EPFD limits, although it is not clear when this work will be completed. We support the work undertaken by the FSM Department of Transportation, Communications and Infrastructure at the ITU in this regard.
- 20 We note that Article 22.5CA of the Radio Regulations authorizes individual countries to exceed the single-entry EPFD limits within their own territories.

22.5CA 2) The limits given in Tables 22 1A to 22 1E may be exceeded on the territory of any country whose administration has so agreed (see also Resolution 140 (Rev. WRC 15)).

- 21 We also note that all of these rules in Article 22 are subject to the overarching obligation in Article 22.2 that NGSO systems not interfere with GSO systems.

22.2 § 2 1) Non-geostationary-satellite systems shall not cause unacceptable interference to and, unless otherwise specified in these Regulations, shall not claim protection from geostationary-satellite networks in the fixed-satellite service and the broadcasting-satellite service operating in accordance with these Regulations. No. 5.43A does not apply in this case.

- 22 In other words, any decision we may make pursuant to Article 22.5CA is subject to the obligation in Article 22.2.

THE NEW FRAMEWORK IN THE UNITED STATES

- 23 In 2026, the FCC issued a decision updating the NGSO-GSO spectrum sharing framework applicable to the 10.7-12.7 GHz, 17.8-18.6 GHz, and 19.7-20.2 GHz bands in the United States.¹⁰ This decision replaced the ITU's EPFD framework with a set of "*performance-based GSO protection criteria*" that gives fixed broadband NGSO satellite systems the right to exceed the ITU's EPFD limits with respect to those spectrum bands within the territory of the United States, subject to certain conditions.

¹⁰ FCC, *Modernizing Spectrum Sharing for Satellite Broadband*, SB Docket No. 25-127, Report and Order (FCC 26-26), released May 1, 2026.

- 24 Specifically, NGSO and GSO operators are required to coordinate their operations in order to establish appropriate measures against interference. If they cannot agree, the FCC imposed the following operational limits on NGSO systems:
- a. a short-term protection criterion of 0.1% absolute increase in link unavailability;
 - b. a long-term protection criterion of 3% time-weighted average throughput degradation for GSO satellite links using adaptive coding and modulation (**ACM**);
 - c. A supplemental protection criterion of -10.5 dB interference-to-noise (**I/N**) for 80% of the time for GSO satellite links that do not use ACM, such as point-to-multipoint video transmissions; and
 - d. A supplemental protection requirement for NGSO systems to observe a minimum 3-degree avoidance angle of the GSO arc (i.e., a GSO-arc exclusion zone of 6 degrees).

THE REQUEST

- 25 On August 13th, 2026, we received a request from SpaceX to allow emissions from their Starlink NGSO Fixed-Satellite Service (**FSS**) system to exceed the ITU's Article 22 single-entry EPFD limits for the 10.7-12.7 GHz, 17.8-18.6 GHz, and 19.7-20.2 GHz bands on the territory of the FSM, subject to the following operating parameters and conditions.
- 26 The Starlink system would operate with a maximum Nco (co-frequency beams)¹¹ of 8 in the 10.7-12.7 GHz band, and a maximum Nco of 6 in the 17.8-18.6 GHz and 19.7-20.2 GHz bands.
- 27 The Starlink system would observe a GSO Avoidance Angle of 4° in the 10.7-12.7 GHz band and of 6° in the 17.8-18.6 GHz and 19.7-20.2 GHz bands.
- 28 Our agreement to this request would apply solely to the territory of the FSM and to the Starlink system operating under these parameters.
- 29 Starlink would respond promptly to any harmful interference complaints, taking all reasonable steps to resolve verified harmful interference.
- 30 Starlink operations would remain subject to the obligation in Article 22.2 not to cause unacceptable interference to GSO networks by respecting the following protection criteria:
- a. Short-term protection: a maximum absolute increase in unavailability of 0.1%

¹¹ This represents the number of radio frequency beams using the same frequencies that an NGSO system uses to serve a given geographic area at the same time.

b. Long-term protection:

(1) GSO links not using ACM: -10.5 dB I/N (or below) for at least 80% of the time, and

(2) GSO links using ACM: 3% average throughput reduction.

31 We requested further information from SpaceX on August 27th, 2026, which they provided on September 2nd, 2026.

32 SpaceX submits that our agreement to its request under Article 22.5CA of the ITU Radio Regulations would enable Starlink to deliver significantly improved broadband performance within the FSM, with the following anticipated benefits:

a. Enhanced coverage and service quality in rural, remote and underserved areas;

b. Increased network capacity on the same network and typically higher user data rates;¹²

c. More stable service when many users are online or when weather is poor;

d. Improved resilience for emergency communications, government and critical infrastructure;

e. Contribution to economic development and alignment with Micronesia's national broadband strategy; and

f. Better ability to use the newest Starlink satellites at their designed performance.

33 SpaceX also submits that no GSO satellite system operators have reported instances of interference, either to SpaceX or to the best of SpaceX's knowledge to the FCC, after SpaceX was authorized by the FCC to exceed the ITU EPFD limits in the United States.

DISCUSSION

34 We consider that SpaceX's request, if we approve it, has the potential to improve broadband fixed satellite services provided to consumers in the FSM.

35 The authorization sought by SpaceX would allow its Starlink fixed broadband NGSO satellite system to exceed the applicable ITU power levels, and to use more satellite beams and more satellites over the same geographic area at the same time. At the same time, as long as SpaceX complies with the requested operational parameters, GSO operations would continue to be protected from harmful interference as required by the ITU Radio Regulations.

36 We are therefore of the preliminary view that we should authorize SpaceX's Starlink system to exceed the single-entry EPFD limits in Tables 22-1A through 22-1E of Article 22 of the

¹² I.e. "speeds."

ITU Radio Regulations for the 10.7-12.7 GHz, 17.8-18.6 GHz and 19.7-20.2 GHz bands within the territory of the FSM.

Question 1: Do you agree that we should allow SpaceX's Starlink fixed broadband NGSO satellite system to exceed the single-entry EPFD limits in Tables 22-1A through 22-1E of Article 22 of the ITU Radio Regulations for the 10.7-12.7 GHz, 17.8-18.6 GHz and 19.7-20.2 GHz bands within the territory of the FSM? If not, please explain in detail why.

- 37 SpaceX proposes to apply in the FSM a slightly modified version of the operational parameters approved by the FCC for the territory of the United States. The material difference between the FCC-approved parameters for the United States and the SpaceX-proposed parameters for the FSM is that the FCC set a minimum 3° GSO-arc avoidance angle as a backstop rule, while SpaceX proposes to apply 4° in the 10.7-12.7 GHz band and 6° in the 17.8-18.6 GHz and 19.7-20.2 GHz bands.
- 38 SpaceX's submissions suggest that these operational parameters have not led to harmful interference to GSO satellite system operations in the territory of the United States.
- 39 Given that the record suggests that the SpaceX-proposed parameters have not resulted in harmful interference to GSO satellite system operations in the territory of the United States, and given that we do not have information on the record about the effects of the less-stringent FCC-approved GSO-arc avoidance parameters, we consider that we should act conservatively and adopt the SpaceX-proposed parameters.
- 40 Accordingly, we are of the preliminary view that we should require SpaceX to comply with the operational parameters as requested by SpaceX, namely:
- a. Starlink operations would remain subject to the obligation in Article 22.2 not to cause unacceptable interference to GSO networks by respecting the following protection criteria:
 - (1) Short-term protection: a maximum absolute increase in unavailability of 0.1%
 - (2) Long-term protection:
 - 1. GSO links not using ACM: -10.5 dB I/N (or below) for at least 80% of the time
 - 2. GSO links using ACM: 3% average throughput reduction
 - b. SpaceX must respond promptly to any harmful interference complaints, taking all reasonable steps to resolve verified harmful interference.
 - c. The Starlink system must observe a minimum GSO Avoidance Angle of 4° in the 10.7-12.7 GHz band and of 6° in the 17.8-18.6 GHz and 19.7-20.2 GHz bands.

- d. The Starlink system must operate with a maximum Nco (co-frequency beams) of 8 in the 10.7-12.7 GHz band, and a maximum Nco of 6 in the 17.8-18.6 GHz and 19.7-20.2 GHz bands.
- e. Our agreement to SpaceX's request shall apply solely to the territory of the Federated States of Micronesia.

Question 2: Do you agree that the authorization to exceed the single-entry EPFD limits in Article 22 of the ITU Radio Regulations should be subject to the proposed operational parameters set out in paragraph 40 above? If not, please explain in detail why. Please describe, in particular, the potential impact on the operations of GSO satellite systems, and provide with justifications the changes you would make to the proposed operational parameters.

- 41 We note that, based on the terms of SpaceX's request, the authorization to exceed the ITU's single-entry EPFD limits (subject to the agreed operational parameters) would only apply to SpaceX's operations in the FSM. In other words, SpaceX is not asking us to allow all fixed broadband NGSO satellite licensees to exceed the ITU's single-entry EPFD limits in the FSM.
- 42 The objectives of the Act include "*providing the conditions for effective competition*" in the FSM. While SpaceX is currently the only fixed broadband NGSO satellite system licensee in the FSM, others may apply for licenses in the future. It is not obvious how applying different operating conditions and parameters to different fixed broadband NGSO satellite systems offering similar or the same services would satisfy that objective in the Act.
- 43 Accordingly, we are of the preliminary view that the authorization to exceed the ITU's single-entry EPFD limits in Tables 22-1A through 22-1E of Article 22 of the ITU Radio Regulations for the 10.7-12.7 GHz, 17.8-18.6 GHz and 19.7-20.2 GHz bands (subject to agreed operational parameters) should be applied to all fixed broadband NGSO satellite licensees in the FSM.

Question 3: Do you agree that the authorization to exceed the ITU's single-entry EPFD limits in Tables 22-1A through 22-1E of Article 22 of the ITU Radio Regulations for the 10.7-12.7 GHz, 17.8-18.6 GHz and 19.7-20.2 GHz bands (subject to agreed operational parameters) should be applied to all fixed broadband NGSO satellite licensees in the FSM? If not, please explain in detail why. Please describe, in particular, the potential impact on the operations of GSO satellite systems.

NEXT STEPS

- 44 We will carefully consider all submissions received by the deadline specified in paragraph 5 above. Following this, we will publish for consultation our Draft Decision, including our responses to the submissions and an explanation for any changes we might make to the proposed authorization to exceed the single-entry EPFD limits in Article 22 of the ITU Radio Regulations or to the proposed operational parameters.
- 45 After carefully considering any submissions received in response to the Draft Decision, we will publish our Final Decision.

CONSULTATION QUESTIONS

- 46 We provide here the relevant consultation questions for respondents' consideration below. When answering a question, please explain your reasoning in detail.
- a. Do you agree that we should allow SpaceX's Starlink fixed broadband NGSO satellite system to exceed the single-entry EPFD limits in Tables 22-1A through 22-1E of Article 22 of the ITU Radio Regulations for the 10.7-12.7 GHz, 17.8-18.6 GHz and 19.7-20.2 GHz bands within the territory of the FSM? If not, please explain in detail why.
 - b. Do you agree that the authorization to exceed the single-entry EPFD limits in Article 22 of the ITU Radio Regulations should be subject to the proposed operational parameters set out in paragraph 40 above? If not, please explain in detail why. Please describe, in particular, the potential impact on the operations of GSO satellite systems, and provide with justifications the changes you would make to the proposed operational parameters.
 - c. Do you agree that the authorization to exceed the ITU's single-entry EPFD limits in Tables 22-1A through 22-1E of Article 22 of the ITU Radio Regulations for the 10.7-12.7 GHz, 17.8-18.6 GHz and 19.7-20.2 GHz bands (subject to agreed operational parameters) should be applied to all fixed broadband NGSO satellite licensees in the FSM? If not, please explain in detail why. Please describe, in particular, the potential impact on the operations of GSO satellite systems

Attachments

- 1 Attachment 1: Comments form

Annex – List of defined terms

ACM	adaptive coding and modulation
Act	The FSM Telecommunications Act of 2014
EPFD	equivalent power flux density
FCC	Federal Communications Commission of the United States of America
FSM	The Federated States of Micronesia
FSS	Fixed-Satellite Service
GSO	geostationary orbit
I/N	Interference-to-noise
ITU	International Telecommunications Union
NGSO	non-geostationary orbit
TRA	The Telecommunication Regulation Authority

Attachment 1 - Comments Form



Feedback on Consultation Paper: Sharing Broadband Satellite Spectrum

Information of commenting party

Full name	
Organization	
Phone number	
Email	
Is confidential information being submitted?	Y/N (Specify below)

Comments

	Comment	Proposed changes	Confidentiality ¹³
<i>Paragraph Number or Section of Consultation Document, or Consultation Question, that Comment Pertains To</i>	<i>Please describe comments on specific section or question. Please be as detailed as possible and explain why you hold your views and what the potential impact of the Authority's proposed changes would be</i>	<i>Please suggest an alternative to the proposed changes (if applicable)</i>	<i>If confidential, please explain reasons for confidentiality request</i>
<i>(Insert rows as needed)</i>			

Please complete this form in full and submit to consultations@tra.fm or in person before **October 17th 2026** to:

Takuro Akinaga
Chief Executive
FSM Telecommunication Regulation Authority
KSP Building, 2nd Floor
Main Street, Kolonia
Pohnpei FM 96941, Federated States of Micronesia

¹³ Confidentiality requests are managed under the rules set out in Section 322 of the Telecommunications Act. Respondents should clearly mark which information is claimed as being confidential and should provide reasons of what commercial harm will result should the information be published. Respondents who make a request for confidentiality should also provide a redacted copy of their submission, with all confidential information removed, that the TRA may publish.