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COSMIC

CONSORTIUM FOR SPACE MOBILITY AND ISAM CAPABILITIES

U.S. REGULATIONS 101: FCC ISAM LICENSING

FEDERAL COMMUNICATIONS COMMISSION – SPACE BUREAU

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1. Workshop Report

1.1 Summary

On May 15, 2025, COSMIC Policy and Regulation (PR) Focus Area hosted the first Workshop in its U.S. ISAM Regulations 101 Workshop Series, with this first Workshop addressing regulation by the Federal Communication Commission (FCC). This 2025 COSMIC PR Product Series is designed to inform COSMIC members, as well as the greater ISAM community, about existing and proposed ISAM-related policies licensing, regulations, policies, forms and personnel from the FCC, the National Oceanic and Atmospheric Administration (NOAA), the Federal Aviation Administration (FAA), and the State Department. The Workshops consist of presentations by government officials, followed by a discussion session in which attendees can pose questions, familiarize regulators with their products, and talk through the effects or needs of future rulemakings. Each Workshop culminates in a written summary, or White Paper, to be made available to COSMIC members and to the broader space community.

This Workshop addressed the FCC's role in ISAM regulation. It featured Stephen Duall, Associate Chief of the FCC's Space Bureau, and Samuel Karty, Space Bureau engineer. Tony Lin, Partner and lead of the Spacetechnology and Satellite Initiative at Cooley LLP, moderated and hosted the discussion which was held live in-person at Cooley's Washington D.C. office and on-line. The panelists addressed the FCC's satellite licensing rules as applied to ISAM missions and offered insights into the licensing process, timing of filing applications, the types of applications operators may file, orbital debris regulations, federal and international coordination processes, lunar missions, and streamlined small satellite licenses. The panelists also noted that there is an outstanding rulemaking proceeding from 2024 that is considering the adoption of new FCC Regulations for ISAM services (FCC Docket Nos. 22-271 and 22-272). The FCC Notice of Proposed Rulemaking is available [here](#)¹.

This White Paper provides a summary of the Workshop, including answers to the questions addressed during the event which are provided below. Much of the discussion focused on the written materials presented at the Workshop which are attached as Appendices to this document:

- Appendix A contains detailed information provided by the FCC outlining its current forms and regulations.
- Appendix B includes a Comparison Framework of the FCC Satellite Authorization processes and FCC Contact Information provided by Cooley LLP.

For COSMIC members, Workshop materials are also available through this link [here](#)².

¹ <https://docs.fcc.gov/public/attachments/FCC-24-21A1.pdf>

² <https://cosmic-consortium.slack.com/docs/T08FJF7GRC5/F08LQUP4DK5>



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1.2 Key topics and questions addressed at the Workshop:

1.2.1 What FCC rules apply to ISAM missions?

There are presently no specific ISAM licensing rules. However, the FCC's general licensing rules apply and allow ISAM operators and their missions to move forward. Indeed, the FCC has already authorized numerous ISAM missions, such as Northrop Grumman's MEV-1 life-extension missions.

1.2.2 What general licensing rules are applicable to ISAM missions?

The Part 97 rules apply to amateur satellite systems. The Part 5 rules apply to experimental systems. Part 25 rules apply to commercial satellite communications.

1.2.3 If a satellite does not have an RF (radiofrequency) component, would it be subject to FCC licensing?

The FCC's rules provide that no person shall use or operate apparatus for the transmission of communications by space or earth stations, except under, and in accordance with, an appropriate FCC authorization. 47 C.F.R. § 25.102. The FCC has not directly addressed the issue of whether an FCC license is needed for all optical communications, since no such application has been filed yet. To date, all applications with optical communications also have RF systems and would, thus, require an FCC license for the satellite due to the RF communications.

1.2.4 What spectrum should be used for ISAM missions?

The U.S. Table of Frequency Allocations identifies the spectrum available for use. At present, there is no spectrum specifically allocated for ISAM missions. There is spectrum allocated for space operations, which is used for telemetry, tracking, and control, but these allocations are reserved for use by Federal Government users, such as NASA or DoD, and therefore require coordination with government spectrum managers before the FCC may authorize their use for a commercial operation. Some ISAM missions have used spectrum allocated for space research, but like space ops, this spectrum is reserved for Federal users and requires coordination.

1.2.5 What should be done to initiate the federal spectrum coordination process? What does that process involve?

Reach out to federal spectrum managers before you file an FCC application. Once the FCC approves an application, then it will be sent to the NTIA for formal coordination. It is critical to have initiated and completed discussions before this stage of approval to avoid delays in license grant.

There are discussions underway among the federal agencies as to how best to help commercial parties identify and reach out to the relevant federal spectrum managers.

1.2.6 What is coordination? How do Federal and International coordination differ?

As a technical matter, Federal coordination is between the FCC, on behalf of the applicant, and NTIA. However, as a practical matter, the applicant needs to initiate discussions with NTIA and



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federal spectrum managers. The FCC is not actively involved in such coordination discussions. Organizations like the Commercial Smallsat Spectrum Management Association (cssma.space) host pre-coordination meetings twice a year to help facilitate such activities.

International coordination involves the coordination of satellite systems authorized by different administrations. The FCC, which serves as the Notifying Administration of the United States to the International Telecommunication Union (ITU), will send certain international spectrum filings to the ITU on behalf of applicants/licensees. This filing will contain technical information about a system such as the number of operating satellites, frequency bands used, and orbits. If there is an issue with the filing, the ITU may reject it or request clarification. The ITU filing process is complex and requires extensive knowledge of the ITU Radio Regulations and ITU processes. Parties may wish to obtain professional support for assistance in this process.

ITU software (BR-SIS), necessary for submission of ITU filings, is available at no charge on the [ITU's website](https://www.itu.int/en/ITU-R/software/Pages/brsis.aspx)³. The ITU's website also has databases that can provide helpful information on satellite systems.

1.2.7 What information is contained in the FCC application?

The main parts of an FCC application are: Form 312, which contains largely administrative information; a narrative, which provides description of the system; a Schedule S, which is a database describing the technical parameters and capabilities of the system; and an orbital debris mitigation plan.

1.2.8 How far in advance of launch should you file?

You should consider filing an application at least 6 to 9 months in advance of the scheduled launch. As soon as you know you will need an FCC license, you should consider reaching out to FCC staff, who can provide guidance and issue spot. *Appendix B* to this White Paper includes a list of suggested FCC contacts for this purpose. Applicants should also review the FCC's Transparency Initiative resources available [here](https://www.fcc.gov/space/transparency-initiative)⁴.

1.2.9 What is an orbital debris mitigation plan?

The orbital debris mitigation plan is a description of an operator's efforts to address certain orbital debris matters identified in the FCC's rules. Filing such a plan is a requirement of FCC applications. Most satellite applicants also submit an Orbital Debris Assessment Report (ODAR), which is based on a NASA format. However, the two are not identical.

³ <https://www.itu.int/en/ITU-R/software/Pages/brsis.aspx>

⁴ <https://www.fcc.gov/space/transparency-initiative>



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The FCC is concerned about anything that could affect or impair a mission, including the deorbiting process. NASA makes available software its [NASA DAS](#)⁵ software upon request. The software helps compute relevant orbital debris metrics, including the small object collision probability, the large object collision probability, and re-entry casualty risk.

1.2.10 How are deep space missions addressed?

The FCC's rules allow for authorization of deep space missions. Any applicant for such missions should identify the relevant orbital characteristics, flight path, and relevant activities, such as asteroid mining, for example, as part of its application.

1.2.11 How does the FCC address missions that traverse through LEO and GEO?

Under the FCC's analyses, applications technically involve either geostationary orbits or non-geostationary orbits. The FCC is still exploring how to assess spacecraft that involve both types of orbits. When people discuss radio frequency interference, it is important to know the exact location and specific frequencies involved. In some cases, it is possible to move forward with missions in which a worst-case analysis shows that there will be no harmful interference to other operators.

1.2.12 How are lunar missions handled by the FCC's rules?

The FCC has authorized several lunar missions under the small spacecraft licensing process. Spectrum usage is a critical factor, and NASA has developed a specific plan to address the use of frequency bands for lunar missions. Accordingly, coordination with NASA's [Lunar Spectrum Management](#)⁶ group is important. NASA is also involved in international coordination matters associated with lunar missions. Catherine C. Sham at the NASA Johnson Space Center (JSC) is the appropriate contact.

The Department of State is another government entity that participates in lunar missions because of legal obligations the U.S. has under international treaties involving the moon and space generally. The Department of State has generally accepted responsibility for space objects if they have FCC licenses.

1.2.13 Have refueling ISAM activities been licensed?

No. There have been no applications filed with the FCC for satellite refueling missions. However, that is not to say that the FCC would not authorize such missions.

⁵ <https://software.nasa.gov/software/MS-C-26690-1>

⁶ <https://www.nasalsmp.org/SitePages/Home.aspx>



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Appendix A. Regulations 101: FCC ISAM LICENSING



APPENDIX A

Regulations 101: FCC ISAM LICENSING

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MAY 12, 2025



DISCLAIMER:

- The information contained in these slides is more than “101” level information and applies to regulation of space stations in general (not just ISAM), so please do not attempt to digest completely.
- We are not going to read from the slides. There is more information on them than we can address in our allotted time. Take them home for future reference.
- Majority of information on slides is taken from the Space Bureau’s Transparency Initiative webpages: <https://www.fcc.gov/space/transparency-initiative>

OVERVIEW

Space Station (Satellite) Licensing

Different Types of FCC Licenses

- Part 97 – Amateur
- Part 5 – Experimental
- Part 25 – Satellite Communications

Space Station – Amateur (Part 97)

The rules and regulations for amateur radio service are contained in part 97 of Title 47.

Satellites can be amateur space stations. The license grantee of each amateur space station must make written notifications to the Space Bureau before launch, after launch, and after termination of transmissions. FCC regulations permit amateur satellite operations if the space station:

Operates in appropriately allocated amateur frequency bands,

Is controlled by a person holding an amateur station license, and

Is more than 50 km above the Earth's surface aboard "any craft that is documented or registered in the United States."

Communications must be conducted by amateurs for amateur radio purposes (i.e., self-training, intercommunication and technical investigation carried out by a duly authorized person interested in radio technique solely with a personal aim and without pecuniary interest). The following materials are needed to support an FCC finding that an amateur satellite is "documented":

Letter from the International Amateur Radio Union (IARU) documenting successful coordination

Detailed technical description of the design and operation of the spacecraft

Copy of the ITU filing

Orbital Debris Mitigation (ODM) Plan

Point of Contact information of Licensed Control Operator

Space Station - Experimental

The rules and regulations for experimental radio service are contained in part 5 of Title 47. This licensing process is:

- For experimental missions, which are *generally for the purposes of experimentation, product development, and market trials*, respective to Part 5 rules on purpose and scope.
- Administered by the FCC's Office of Engineering and Technology (OET).

Part 5 experimental space station applications:

- Are filed through the FCC's Experimental Licensing System ([ELS](#)).
 - Experiments operating 6 months or less file a Special Temporary Authority (STA) under Part 5.
 - Experiments longer than 6 months file using the Form 442 application.
- Require the submission of an ITU satellite network filing and orbital debris mitigation (ODM) plan prior to grant, as well as the commitment to pay ITU cost recovery fees. OET coordinates with the Space Bureau on the review of these applications.
- Are authorized on an unprotected, non-interference basis (NIB).
- Can be in any frequency band, but applicants should consider allocated space bands.
- The FCC coordinates requests to operate on shared federal frequency bands with the National Telecommunications and Information Administration (NTIA), an Executive Branch agency whose responsibilities include managing the federal use of spectrum.

Space Station – Communication (Part 25)

The rules and regulations for satellite communications are contained in part 25 of Title 47. Accordingly, “part 25” refers to the set of rules that govern the regulation of most non-federal satellite activities, and that the Space Bureau uses to evaluate applications for space and earth station authorizations.

All applications for authority to **operate space stations under part 25** generally require:

- Information about the frequencies requested for use, including relevant technical details.
- Submission of a plan for orbital debris mitigation.
- For U.S.-licenses, preparation of materials for an International Telecommunication Union (ITU) satellite network filing, which is submitted by the FCC to the ITU.

The FCC also issues grants of “**Special Temporary Authority (STA)**”. These are limited grants for extraordinary circumstances requiring temporary operations in the public interest⁴. Under part 25, STAs do not typically substitute for space station licenses.

“**Market Access**” pertains to the authorization of U.S. licensed earth stations to communicate with non-U.S. licensed satellites. The review process for market access applications is nearly identical to the process used for U.S. licensed satellite applications.

The FCC’s Part 25 also includes the “**Small Satellite**” and “**Small Spacecraft**” Licensing Processes, which are designed for satellites and other spacecraft meeting certain criteria, including having short orbital lifetimes. These processes have lower application and regulatory costs than regular part 25 satellite licenses, and are also often associated with shorter processing times than regular part 25 licenses.

Part 25 rules also cover licensing of earth stations in the U.S.

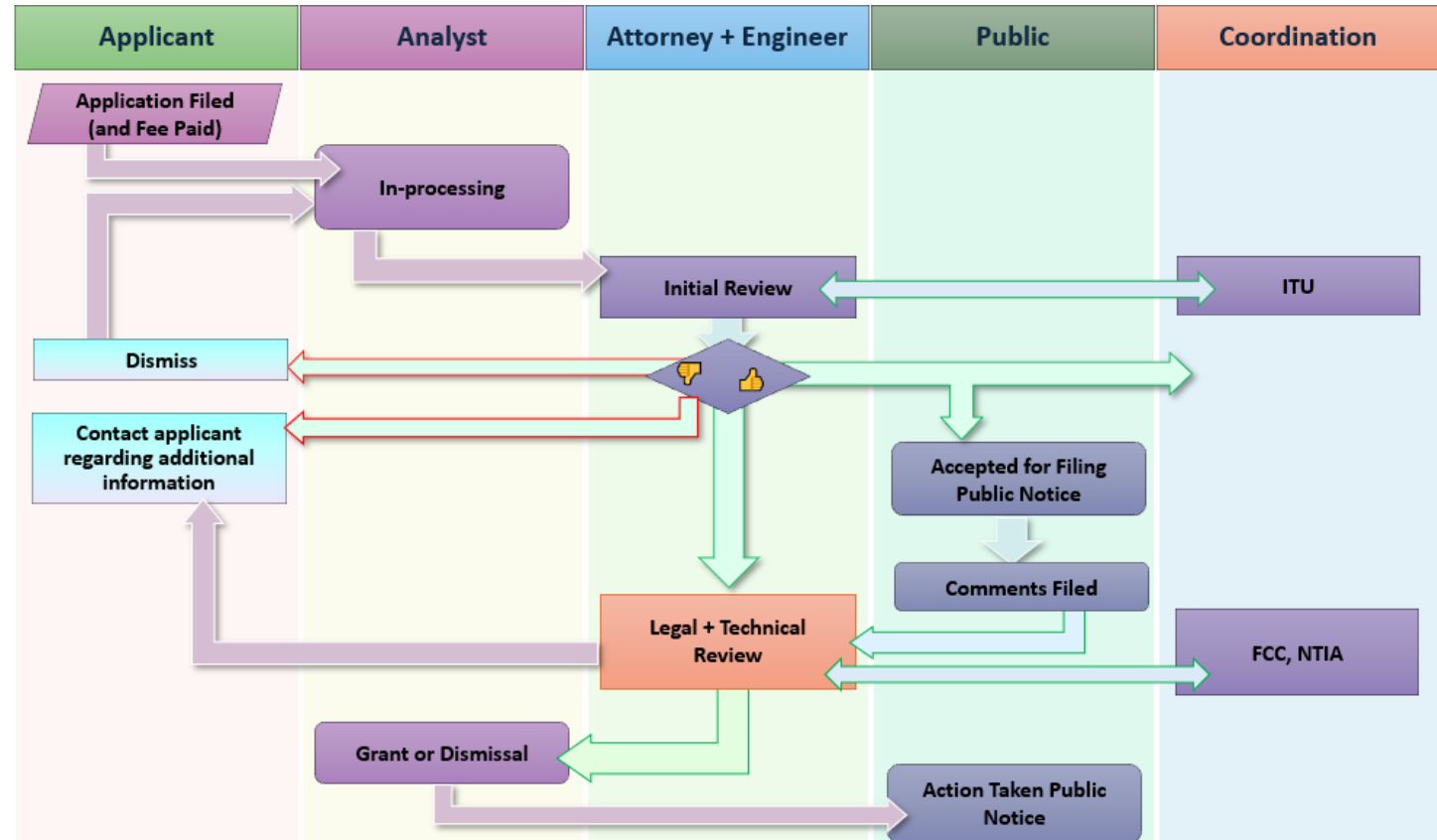
- This includes, for example, modifications necessary to the licenses of existing earth stations to add additional satellite points of communication.

The FCC coordinates requests to operate on shared federal frequency bands with the National Telecommunications and Information Administration (NTIA), an Executive Branch agency whose responsibilities include managing the federal use of spectrum.

Part 25 – Time Line to Process

The overall part 25 space station licensing process can vary in length, depending on the type of application, frequency bands requested, and complexity of the system. While a straightforward, uncontested application for a GSO satellite or small satellite may have processing times on the order of 6-9 months; some applications may take longer to process, particularly where there are waiver requests, requests for use of frequency bands shared with federal operators, requests for a novel type of operation, when the application is subject to processing round procedures, or has other significant issues.

A breakdown of the typical satellite licensing steps is shown. This process includes review, 30-day Public Notice process, submission of ITU filings, and coordination.



Information Required for Part 25 Application



Form 312

Form 312, Question 40:
Corporate Ownership



Narrative



Technical Annex



Schedule S



Orbital Debris Mitigation Plan



ITU Filing Related Materials

ITU SpaceCap Filing (API / CR)
ITU Graphical Interference
Management System (GIMS) file
ITU SpaceVal Output
FCC Cover Letter for ITU SpaceCap
Filing
ITU Cost Recovery Letter

Form 312

Applications for space stations must be filed electronically on FCC Form 312 and include all information required under § 25.114.

<https://transition.fcc.gov/Forms/Form312/312Fill.pdf>

Note that this fillable version of the form is provided for reference, but applicants input text directly into [ICFS](#).

Form 312, Question 40

Applicants are required to disclose all stockholders owning an indirect or direct equity or voting interest of 10 percent or more of the Filer's stock. Information to disclose include: the percentages held, name, address, and citizenship of each interest holder.

The names and addresses of the officers and directors of the Filer are required. A box diagram showing relationship amongst owners and entities can be helpful to provide.

Indirect stock ownership disclosure: Indirect stock ownership of 10% or more must be disclosed. To calculate the ownership percentage, multiply the percentage each agent has in the vertical ownership chain.

- For example, if A owns 30 percent of company X, which owns 60 percent of company Y, which owns 26 percent of “applicant,” then X's interest in “applicant” would be 26 percent (the same as Y's interest because X's interest in Y exceeds 50 percent), and A's interest in “applicant” would be 7.8 percent (0.30×0.26 because A's interest in X is less than 50 percent).

Additional information on [foreign ownership](#).

- Section 310(a) prohibits a foreign government or its representative from holding any radio license.
- Section 310(b) contains specific restrictions on who can hold a broadcast, common carrier, or aeronautical radio station license.
- Sections 310(b)(1) and (b)(2) prohibit any alien or representative, and any foreign-organized corporation, respectively, from holding a broadcast, common carrier, aeronautical radio license.
- Section 310(b)(3) prohibits foreign individuals, governments, and corporations from owning more than twenty percent of the capital stock of a broadcast, common carrier, or aeronautical radio station licensee.
- Section 310(b)(4) establishes a twenty-five percent benchmark for investment by foreign individuals, governments, and corporations in U.S.-organized entities that directly or indirectly control a U.S. broadcast, common carrier, or aeronautical radio station licensee.

Form 312, Question 40 - Example

Form 312, Question 40: Corporation Information
Officers, Directors, and Ten Percent or Greater Stockholders

The applicant, Space Stars Unlimited, is a Delaware corporation with its principal offices located at 19 Polis Massa St., Modesto, CA, 95313. Below, the required information pertaining to management, ownership and corporate organization is provided.

Officers and Directors

Name	Title
Laura Luna	Chief Executive Officer (CEO) and President
Jennifer Jupiter	Chief Operating Officer (COO)
Peter Pluto	Chief Technology Officer (CTO)
George Galaxy	Director

Stockholders Holding Ten Percent or Greater Voting Stock

The names and citizenship of stockholders directly or indirectly owning and/or voting 10% or more of Space Stars Unlimited’s voting stock are:

Name	Address	Citizenship (Place of Incorporation)	Percent
Ashley Asteroid	57 Stewjon Road, Apt. R2D2, Washington, DC 20554	USA	10.1%
Mary Mars	80 Coruscant Road, Modesto, CA, 95313	USA	10.2%
Sky Shot Inc.	896 Hidden Homeworld Path, Seney, MI 49883	USA	35%
Sally Saturn	47 Mos Eisley Way, Cape Town	South Africa	15%

Sky Shot Inc. Breakout

The names and citizenship of stockholders indirectly owning and/or voting 10% or more of Space Stars Unlimited through their ownership of Sky Shot Inc.’s voting stock:

Name	Address	Citizenship (Place of Incorporation)	Percent
Johnny Jupiter	12 Asteroid Way, Cary, NC 27511	USA	52%
Stella Stardust	29 Exoplanet Circle, Cambridge, MA 02139	USA	48%

No other individuals or entities directly or indirectly hold a 10% or greater ownership or voting interest in Space Stars Unlimited.

Legal Narrative

The legal Narrative provides information pertaining to the proposed system's space and ground segment, and band-by-band frequency use. It additionally covers how the proposed system will serve the public interest, and whether there are any requests for waivers of the Commission's rules.

Separate templates for U.S. licenses and market access petitions are provided.

[Part 25 Narrative Template for U.S. Space Station License](#)

[Part 25 Narrative Template for Market Access for Non-U.S. satellite or system \(Petition for Declaratory Ruling\)](#)

Technical Annex



The Technical Annex provides information (in the form of diagrams, tables, and text) required in section 25.114(d) that is not part of the “fill in the box” format of the Schedule S or other Exhibits.



Some applicants find it helpful to complete a Compliance Matrix, or table of listing each regulation and the corresponding Technical Annex section in which it is covered.

Schedule S

The Schedule S contains most of the technical and operational details, primarily included in 25.114(c), pertaining to the space station.

An updated version of Schedule S is planned as part of the forthcoming ICFS update.

<https://enterpriseefiling.fcc.gov/schedules/resources/Instructions%20for%20Schedule%20S%20vApr2016.pdf>

Orbital Debris

Applicants are required to provide an Orbital Debris Mitigation (ODM) Plan addressing Commission rules as part of the application process (section 25.114(d)(14)):

A description of the design and operational strategies that will be used to mitigate orbital debris, including the following information:

- (i) A statement that the space station operator has assessed and limited the amount of debris released in a planned manner during normal operations. Where applicable, this statement must include an orbital debris mitigation disclosure for any separate deployment devices, distinct from the space station launch vehicle, that may become a source of orbital debris;
- (ii) A statement indicating whether the space station operator has assessed and limited the probability that the space station(s) will become a source of debris by collision with small debris or meteoroids that would cause loss of control and prevent disposal. The statement must indicate whether this probability for an individual space station is 0.01 (1 in 100) or less, as calculated using the NASA Debris Assessment Software or a higher fidelity assessment tool;
- (iii) A statement that the space station operator has assessed and limited the probability, during and after completion of mission operations, of accidental explosions or of release of liquids that will persist in droplet form. This statement must include a demonstration that debris generation will not result from the conversion of energy sources on board the spacecraft into energy that fragments the spacecraft. Energy sources include chemical, pressure, and kinetic energy. This demonstration should address whether stored energy will be removed at the spacecraft's end of life, by depleting residual fuel and leaving all fuel line valves open, venting any pressurized system, leaving all batteries in a permanent discharge state, and removing any remaining source of stored energy, or through other equivalent procedures specifically disclosed in the application;
- (iv) A statement that the space station operator has assessed and limited the probability of the space station(s) becoming a source of debris by collisions with large debris or other operational space stations.

Orbital Debris (cont.)

- (A) Where the application is for an NGSO space station or system, the following information must also be included:
- (1) A demonstration that the space station operator has assessed and limited the probability of collision between any space station of the system and other large objects (10 cm or larger in diameter) during the total orbital lifetime of the space station, including any de-orbit phases, to less than 0.001 (1 in 1,000). The probability shall be calculated using the NASA Debris Assessment Software or a higher fidelity assessment tool. The collision risk may be assumed zero for a space station during any period in which the space station will be maneuvered effectively to avoid colliding with large objects.
 - (2) The statement must identify characteristics of the space station(s)' orbits that may present a collision risk, including any planned and/or operational space stations in those orbits, and indicate what steps, if any, have been taken to coordinate with the other spacecraft or system, or what other measures the operator plans to use to avoid collision.
 - (3) If at any time during the space station(s)' mission or de-orbit phase the space station(s) will transit through the orbits used by any inhabitable spacecraft, including the International Space Station, the statement must describe the design and operational strategies, if any, that will be used to minimize the risk of collision and avoid posing any operational constraints to the inhabitable spacecraft.
 - (4) The statement must disclose the accuracy, if any, with which orbital parameters will be maintained, including apogee, perigee, inclination, and the right ascension of the ascending node(s). In the event that a system is not able to maintain orbital tolerances, *e.g.*, its propulsion system will not be used for orbital maintenance, that fact must be included in the debris mitigation disclosure. Such systems must also indicate the anticipated evolution over time of the orbit of the proposed satellite or satellites. All systems must describe the extent of satellite maneuverability, whether or not the space station design includes a propulsion system.
 - (5) The space station operator must certify that upon receipt of a space situational awareness conjunction warning, the operator will review and take all possible steps to assess the collision risk, and will mitigate the collision risk if necessary. As appropriate, steps to assess and mitigate the collision risk should include, but are not limited to: Contacting the operator of any active spacecraft involved in such a warning; sharing ephemeris data and other appropriate operational information with any such operator; and modifying space station attitude and/or operations.
- (B) Where a space station requests the assignment of a geostationary orbit location, it must assess whether there are any known satellites located at, or reasonably expected to be located at, the requested orbital location, or assigned in the vicinity of that location, such that the station keeping volumes of the respective satellites might overlap or touch. If so, the statement must include a statement as to the identities of those satellites and the measures that will be taken to prevent collisions;

ORBITAL DEBRIS (CONT.)

- (V) A statement addressing the trackability of the space station(s). Space station(s) operating in low-Earth orbit will be presumed trackable if each individual space station is 10 cm or larger in its smallest dimension, excluding deployable components. Where the application is for an NGSO space station or system, the statement shall also disclose the following:
 - (A) How the operator plans to identify the space station(s) following deployment and whether space station tracking will be active or passive;
 - (B) Whether, prior to deployment, the space station(s) will be registered with the 18th Space Control Squadron or successor entity; and
 - (C) The extent to which the space station operator plans to share information regarding initial deployment, ephemeris, and/or planned maneuvers with the 18th Space Control Squadron or successor entity, other entities that engage in space situational awareness or space traffic management functions, and/or other operators.
- (vi) A statement disclosing planned proximity operations, if any, and addressing debris generation that will or may result from the proposed operations, including any planned release of debris, the risk of accidental explosions, the risk of accidental collision, and measures taken to mitigate those risks.

ORBITAL DEBRIS (CONT.)

- (vii) A statement detailing the disposal plans for the space station, including the quantity of fuel—if any—that will be reserved for disposal maneuvers. In addition, the following specific provisions apply:
 - (A) For geostationary orbit space stations, the statement must disclose the altitude selected for a disposal orbit and the calculations that are used in deriving the disposal altitude.
 - (B) For space stations terminating operations in an orbit in or passing through the low-Earth orbit region below 2,000 km altitude, the statement must disclose whether the spacecraft will be disposed of through atmospheric re-entry, specifying if direct retrieval of the spacecraft will be used. The statement must also disclose the expected time in orbit for the space station following the completion of the mission.
 - (C) For space stations not covered by either [paragraph \(d\)\(14\)\(vii\)\(A\)](#) or [\(B\)](#) of this section, the statement must indicate whether disposal will involve use of a storage orbit or long-term atmospheric re-entry and rationale for the selected disposal plan.
 - (D) For all space stations under [paragraph \(d\)\(14\)\(vii\) \(B\)](#) or [\(C\)](#) of this section, the following additional specific provisions apply:
 - (1) The statement must include a demonstration that the probability of success of the chosen disposal method will be 0.9 or greater for any individual space station. For space station systems consisting of multiple space stations, the demonstration should include additional information regarding efforts to achieve a higher probability of success, with a goal, for large systems, of a probability of success for any individual space station of 0.99 or better. For space stations under [paragraph \(d\)\(14\)\(vii\)\(B\)](#) of this section ending their mission in or passing through the low-Earth orbit region below 2000 km altitude, successful disposal is defined, for the purposes of this [paragraph \(d\)\(14\)\(vii\)\(D\)\(1\)](#), as atmospheric re-entry of the spacecraft as soon as practicable, but no later than five years following completion of the mission. For all other space stations under [paragraphs \(d\)\(14\)\(vii\)\(B\)](#) and [\(C\)](#) of this section, successful disposal will be assessed on a case-by-case basis.
 - (2) If planned disposal is by atmospheric re-entry, the statement must also include:
 - (i) A disclosure indicating whether the atmospheric re-entry will be an uncontrolled re-entry or a controlled targeted reentry.
 - (ii) An assessment as to whether portions of any individual spacecraft will survive atmospheric re-entry and impact the surface of the Earth with a kinetic energy in excess of 15 joules, and demonstration that the calculated casualty risk for an individual spacecraft using the NASA Debris Assessment Software or a higher fidelity assessment tool is less than 0.0001 (1 in 10,000).
 - (E) Applicants for space stations to be used only for commercial remote sensing may, in lieu of submitting detailed post-mission disposal plans to the Commission, certify that they have submitted such plans to the National Oceanic and Atmospheric Administration for review.
- (viii) For non-U.S.-licensed space stations, the requirement to describe the design and operational strategies to minimize orbital debris risk can be satisfied by demonstrating that debris mitigation plans for the space station(s) for which U.S. market access is requested are subject to direct and effective regulatory oversight by the national licensing authority.

ORBITAL DEBRIS (CONT.)

SPACE BUREAU TRANSPARENCY PAGE HAS TOOLS TO HELP!

<https://www.fcc.gov/space/orbital-debris>

- FAQs: <https://www.fcc.gov/space/faq-orbital-debris>
- Check List:
<https://www.fcc.gov/sites/default/files/ODM%20Plan%20Checklist%20-%20Streamlined%20Small%20Space%20Stations.pdf>

ITU FILINGS MATERIALS

FCC COVER LETTER FOR ITU SPACECAP FILING (TEMPLATE)

<https://www.fcc.gov/sites/default/files/ITU%20Cost%20Recovery%20Letter%20Template.docx>

The Director
Radiocommunication Bureau
International Telecommunication Union
Place des Nations
CH-1211 Geneva 20, Switzerland

Subject: Advance Publication Information for a new non-geostationary satellite system, [**Satellite Name in boldface**]

Dear Sir:

Pursuant to Article 9.1 and appendix 4 of the Radio Regulations, the Administration of the United States of America is hereby providing advance publication information for the non-geostationary satellite system, [**Satellite Name in boldface**]. The **API** filing for the [**Satellite Name in boldface**] satellite network, created with Space Capture [**V.X.X (e.g. V.9.1; remove parenthetical)**]

Included are the following files:

- [**Satellite Name in boldface**] API.mdb
- [**Satellite Name in boldface**] GIMS.mdb

In addition, we would like to provide the cost recovery billing information under Agency code [**YYY**] in the Preface to the International Frequency List (IFL) for U.S.A. commercial operators. Please add the operating agency code and contact information for [**Company Name**] to the IFL Preface, Table 12A/12B.

Cost-recovery invoices associated with this satellite system should be sent to:

Point of Contact Name: [Insert full name and title of POC within your company, college, or scientific organization; the POC cannot be outside counsel or hired consultant]

Organization Name: [Insert name of your company, college, or scientific org.]

Address: [Insert address of POC within your company, college, or scientific org.]

E-Mail: [Insert e-mail address of POC within your company, college, or scientific org.]

Telephone Number: [Insert telephone number of POC your company, college, or scientific org.]

We also request that a courtesy copy of the cost-recovery invoice be sent to our administration.

Please acknowledge receipt of this information and thank you for your kind consideration in this matter.

Sincerely,

[Secretary]
Office of the Secretary
Federal Communications Commission
45 L Street, N.E.
Washington, D.C. 20554

Subject: ITU Cost Recovery Declaration for the [insert your commercial satellite name here] Satellite Network Operating in [insert “Geostationary Orbit at xxx° E.L./W.L.” or “Non-geostationary Orbit” here] in the [insert the word “Planned” or “Non-planned” here] Frequency Bands. [Insert its ITU satellite filing name here in parenthesis]

Reference: FCC Application File No. [insert your assigned file number here]; Callsign [insert your assigned callsign here]

Dear FCC Secretary,

[Insert the name of your company, college, or scientific organization here] is aware that in accordance with Resolution 88 of the International Telecommunication Union’s (ITU) Plenipotentiary Conference (Marrakech, 2002), and ITU Council Decision 482, as modified, cost-recovery fees will apply to satellite network filings received by the Radiocommunications Bureau after November 7, 1998. As a consequence, Commission applicants are responsible for any and all fees charged by the ITU to process their satellite network filings. [Insert name of your company, college, or scientific organization here] hereby states that it is aware of this requirement and unconditionally accepts all cost recovery responsibilities associated with the ITU filings for the [insert your commercial satellite name here] satellite network. Please address all cost-recovery inquiries, and ITU correspondence and filings, related to the [insert your commercial satellite name here] satellite network to the following point of contact. We understand that should there be any change in the point of contact information, we will inform the Commission within 30 days of change in point in contact.

Point of Contact Name: [Insert full name and title of POC within your company, college, or scientific organization; the POC cannot be outside counsel or hired consultant. Whomever is the point of communication for cost recovery letters must be able to receive and respond to their email quickly, since there can be significant consequences for missed emails on these issues.]

Organization Name: [Insert name of your company, college, or scientific organization]

Address: [Insert address of POC within your company, college, or scientific organization]

E-Mail: [Insert e-mail address of POC within your company, college, or scientific organization. This email address must be able to receive and send messages.]

Telephone Number: [Insert telephone number of POC your company, college, or scientific organization]

[Insert the name of your company, college, or scientific organization here] understands that it must remit payment of any resultant cost-recovery fee to the ITU by the due date specified in the ITU invoice, unless an appeal filed prior to the due date is pending with the ITU. We fully understand that a license granted in reliance on such a commitment will be conditioned upon discharge of any such cost-recovery obligation. We also acknowledge that, in accordance with 47 C.F.R. §25.111, should we have an overdue ITU cost-recovery fee and have no appeal pending with the ITU, the Commission may dismiss any application associated with that satellite network.

Sincerely,

/ signature /

[Insert name of person authorizing this letter here]

[Insert title of person authorizing this letter here]

[Insert the name of your company, college, or scientific organization here]

ITU FILINGS MATERIALS (CONT.)

COST RECOVERY LETTER

(<https://www.fcc.gov/sites/default/files/ITU%20COST%20RECOVERY%20LETTER%20TEMPLATE.DOCX>)

COORDINATION

Frequency coordination is the technical exchange of planned spectrum or radio frequency use conducted by authorized operators when designing or operating a radio network. The purpose of frequency coordination is to ensure the implementation of new radiocommunication systems while avoiding harmful interference with other existing or planned users. Because satellite footprints are often large, and may cover more than one country, frequency coordination is especially important to avoid interference with other satellite and terrestrial networks.

The International Telecommunications Union (ITU) through the World Radio Conference (WRC) process has developed the procedures for satellite coordination activities. The US, as a signatory to the ITU treaty texts, participates in the coordination process for each satellite network or system that is planned to be operated by a U.S. company. Once an application has been filed with the FCC, national (both federal and non-federal) and international satellite coordination are required.

For some types of systems, an applicant is encouraged to engage in an informal “pre-coordination” with incumbent federal networks prior to submitting a space station application to the FCC if they plan to use frequency bands that are allocated for Federal Government use (e.g. the bands near 400 MHz, 2025-2110 MHz, 2200-2290 MHz, 8000-8400 MHz, 20.2-21.2 GHz and 30-31 GHz). Pre-coordination with the National Telecommunications and Information Administration (NTIA) is highly encouraged at the earliest design stages to reduce application processing delays and possible application denial. This coordination is recommended even if the proposed operations are primarily to be conducted outside of the United States and its Possessions (US&P).

COORDINATION (CONT.)

The following reference guides are provided to aid in better understanding coordination:

- [Informal Satellite Frequency Coordination \("Pre-Coordination"\)](#)
- [National U.S. Coordination: Federal and Non-Federal](#)
- [International Satellite Coordination](#)
- [Guidelines for Operator-to-Operator Coordination](#)
- [How to Prepare a U.S. ITU Filing](#)
- [FAQ: Coordination](#)
- Coordination Event -- [OverviewPowerpoint download](#)
- Coordination Event -- [US Process for ITU FilingsPowerpoint download](#)
- Coordination Open House event – [Recording](#)
- Coordination Open House – [Public Notice](#)

When filing the application, the network characteristics and services defined must be identified correctly for proper coordination. Several of these service classes are provided in the [Glossary and Acronyms](#) list, which also includes other key terms.

Space Station License Term		
License Type	License Term	Exceptions
Part 25	15 years	6 years for small satellites 8 years for certain SDARS and DBS space stations
Part 5	2-5 years	
Special Temporary Authority (STA)	30, 60, or 180 days	

License Terms

Geostationary-Orbit (GSO) space stations: For GSO space stations licensed under part 25, the license term will begin at 3 a.m. Eastern Time on the date when the licensee notifies the Commission section [25.173\(b\)](#) that the space station has been successfully placed into orbit at its assigned orbital location and that its operations conform to the terms and conditions of the space station authorization.

Non-Geostationary Orbit (NGSO) space stations: For NGSO space stations licensed under part 25, sections [25.122](#) and [25.123](#), the license period will begin at 3 a.m. Eastern Time on the date when the licensee notifies the Commission (section [25.173\(b\)](#)) that operation of an initial space station compliant with the license terms and conditions and that the space station has been placed in its authorized orbit. Operating authority for all space stations subsequently brought into service pursuant to the license will terminate upon its expiration.

NGSO Small Sats/Small Spacecraft: For NGSO space stations granted under the part 25 streamlined processing rules for small satellites or small spacecraft, sections [25.122](#) and [25.123](#), the license period will begin at 3 a.m. Eastern Time on the date when the licensee notifies the Commission (section [25.173\(b\)](#)) that operation of an initial space station is compliant with the license terms and conditions and that the space station has been placed in its authorized orbit and has begun operating. Operating authority for all space stations subsequently brought into service pursuant to the license will terminate upon its expiration.

The document granting STA will state the commencement and end dates of the authorization.

Fees & Bonds

– Parts 5 & 97

“Part 5” Experimental License	Application Fee: \$140
STA	Application Fee: \$90 for “part 5” and \$1600 (per Call Sign) for “part 25” (47 CFR 1.1107)
“Part 97” Amateur Radio License	Application Fee: \$35

Applicants must pay appropriate fees at the time of filing and on an annual basis thereafter for part 25 licensees and market access grantees, once their satellite is licensed and operational. For a further description of the FCC’s Regulatory and Licensing fees see <https://www.fcc.gov/licensing-databases/fees>. It is important to note that fees are subject to change, and those included below are accurate as of the publication date of this document. Applicants may begin construction of a space station at their own risk, as there is no construction permit required 47 CFR § 25.113(f).

In addition, in most cases there are costs to part 25 licensees related to maintaining a surety bond following grant of a license. This bond is required by the FCC’s part 25 rules in order to ensure that the licensee is meeting certain deployment milestones associated with their satellite or satellite system license.

Fees & Bonds - Part 25 Commercial License

Application Fee: See 47 CFR § 1.1107. A full schedule of processing fees for applications for space station licenses and market access grants can be found at <https://www.fcc.gov/licensing-databases/fees/application-processing-fees>. Below are select application fees.

•**GSO Space Stations** - Application to Construct, Deploy, and Operate: \$3,965 per satellite

•**NGSO Space Stations** - Application for Authority to Construct, Deploy, and Operate: \$16,795 per system of technically identical satellites, per Call Sign

•Small Satellites, or Small Spacecraft - Application to Construct, Deploy, and Operate: \$2,425 per Call Sign

•**All Space Stations, Amendments** - \$1,810, per Call Sign

•**All Space Stations, Modifications** - \$2,785, per Call Sign

•**All Space Stations, Assignment or Transfer of Control** - \$830 (first Call Sign)/\$445 (for each additional Call Sign)

•**All Space Stations, Pro Forma Assignment or Transfer of Control** - \$445, per transaction

Applicants must electronically submit payment within fourteen (14) calendar days of the date of filing the application in ICFS. If not, the FCC will dismiss the application. 47 CFR 1.10009(e)(4).

Surety Bond: See [47 CFR § 25.165](#)

Licensees generally must post a surety bond 30 days after grant or 1 year and 30 days after grant for “small satellite” or “small spacecraft” licensees (§ 25.122 and § 25.123). The purpose of bond is to prevent spectrum warehousing. Bond will become payable in the event a licensee does not meet specific satellite implementation milestones outlined in 47 CFR § 25.164. Most operators use a surety company to guarantee the bond. Once the licensee has met the applicable milestone, the FCC will make a finding that the bond can be released. In the event that a licensee surrenders their license before meeting the milestone, the bond amount that must be paid to the U.S. Treasury is calculated as of the date of surrender. Below are the range of amounts that must be maintained for the bond:

GSO Space Station:

•**GSO Surety Bond:** escalating \$1M to \$3M, depending on how much time has elapsed since grant.

•**GSO Milestone:** Launch and operate satellite no later than 5 years after grant

NGSO Space Station:

•**NGSO Surety Bond:** escalating from \$1M up to \$5M, depending on how much time has elapsed since grant.

•**NGSO Milestone 1:** Launch and operate 50% of max number of satellites no later than 6 years after grant (this is the when the bond may be released).

•**NGSO Milestone 2:** Launch and operate remaining satellites no later than 9 years after grant.

Annual Regulatory Fee: See 47 CFR 1.1156. Regulatory fees are adjusted every year pursuant to section 9 of the Communications Act. Below are select regulatory fees for FY2024 (ending September 30, 2024).

•**GSO space station:** \$144,155 per operational space station

•**NGSO space stations – Other:** \$964,200 per operational system in non-geostationary orbit

•**NGSO space stations – Less Complex:** \$441,925 per operational system in non-geostationary orbit

•**NGSO space stations – Small Satellite (including RPO/OOS):** \$12,215 per license/call sign

Each summer, the FCC releases an Order detailing the annual regulatory fees amounts, and a public notice stating the date by which annual regulatory fees must be paid. Licensees and market access grantees owe regulatory fees for each satellite or satellite system that is operational as of October 1 of the preceding calendar year, and payment is due even if a license or market access grant subsequently expired after October 1.

Information about regulatory fees can be found at <https://www.fcc.gov/licensing-databases/fees/regulatory-fees>.

ISAM NPRM (FCC 24-21) Proposed Changes

[TBD]

Revision: A	Document No: COSMIC-E01-PR002-2025-A
Release Date: 10/13/2025	Page: B-1 of 3
Title: U.S. Regulations 101: FCC ISAM Licensing	

Appendix B. Comparison of FCC Satellite Authorizations



Appendix B

Comparison of FCC Satellite Authorizations

	47 C.F.R. Part 5 Experimental License	47 C.F.R. Part 25 Standard NGSO License	47 C.F.R. Part 25 Streamlined Smallsat License
Filing Fee	\$140	\$16,795	\$2,425
Bond Requirement	None	\$1M-\$5M	\$1M-\$5M, one-year grace period
FY2024	None	\$441,925 (less complex) \$964,200 (other)	\$12,215
Constellation	Limited number of satellites	No limit	Ten or fewer satellites; Max. in-orbit lifetime of 6 years 180 kg limit per satellite Satellites above 600 km need propulsion
License Term	2-5 years (renewable)	15 years (renewable)	6 years (not renewable, but can reapply)
Commercial Use Limitation	Experimental in nature; Market trials permitted	None	None
Processing Time	~6 to 12 months	~9 to 12 months	~6 to 12 months
Spectrum Coordination	Required	Required	Required
Orbital Debris Considerations	Yes	Yes	Yes

FCC Contact Information

Space Stations

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Earth Stations

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Technical Questions

- Sam Karty:
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Part 5 Experimental Licencing

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