

SUPPORTING STATEMENT

A. Justification:

1. The Federal Communications Commission (“Commission”) is requesting a three-year extension of the information collection titled, “Mitigation of Orbital Debris,” under OMB Control No. 3060-1013.

General Information

Orbital debris consists of artificial objects orbiting the Earth that are not functional spacecraft. It consists of a wide range of non-functioning man-made objects that have been placed in the Earth's orbit, both accidentally and on purpose. Orbital debris consists of small objects such as paint flakes, discarded lens caps, ejected bolts and pieces of debris from exploded spacecraft and rocket bodies. Since human activity in space began, there has been a steady growth in the number and total mass of orbital debris. Once created, debris remains in orbit indefinitely, absent other forces. Growth in the orbital debris population may limit the usefulness of space for communications and other uses in the future by raising the costs and lowering the reliability of space based systems. Furthermore, the effects of collisions involving orbital debris can be catastrophic and may cause significant damage to functional spacecraft or to persons or property on the surface of the Earth, if the debris re-enters the Earth's atmosphere in an uncontrolled manner.

This information collection does not affect individuals or households; thus, there are no impacts under the Privacy Act.

Information collected during the Commission's authorization process will be used by Commission staff in carrying out the agency's duties concerning satellite communications, pursuant to Sections 1,4(i), 301, 303, 308, 309 and 310 of the Communications Act, 47 U.S.C. Sections 151,154(i), 301, 303, 308,309, and 310.

2. Notification of debris mitigation plans as part of requests for FCC authorization will help preserve the United States' continued affordable access to space and the continued provision of experimental and amateur services. Notification of debris mitigation plans will allow the Commission and potentially affected third parties to evaluate operators' debris mitigation plans prior to the issuance of an FCC approval for communications activities. Notification may also aid in the wider dissemination of information concerning debris mitigation techniques and may provide a base-line of information that will aid in analyzing and refining those techniques. Without Notification of orbital debris mitigation plans as part of applications for FCC authority, the Commission would be denied any opportunity to ascertain whether experimental and amateur operators are in fact considering and adopting reasonable debris mitigation practices, which could result in an increase in orbital debris and a decrease in the utility of space for communications and other uses.

3. Applicants seeking experimental space station licenses under Part 5 may do so using the Experimental Licensing Branch Electronic Filing System, an Internet-based electronic filing system. Amateur applicants under Part 97 can submit information to the Commission for review

via E-mail. In all cases, orbital debris mitigation plans can be included as part of the applicant's electronic filing through commercially available software such as Microsoft Word or Excel, or Adobe Acrobat. As a result, a total of 100 percent of all information collections are submitted to the Commission electronically.

4. Similar information is not available elsewhere.
5. The Commission has not developed a definition of small entities applicable to satellite operators. Therefore, the application definition of small entity is generally the definition under the Small Business Act (SBA) rules applicable to satellite telecommunications. This definition provides that a small entity is expressed as one with \$30 million or less in annual receipts. Commission records also reveal that there are approximately 240 space station operators licensed by this Commission. The Commission does not request or collect annual revenue information, and thus is unable to estimate the number of licensees that would constitute a small business under the SBA definition. Small businesses may not have the financial ability to become space station licensees because of the high implementation costs associated with satellite systems and services.

The Commission concluded that the costs of Notification are not unduly burdensome when balanced against the public interest benefits of preserving safe and affordable access to space. It is expected that small entities, including businesses with fewer than 25 employees, will have the resources to prepare and disclose orbital debris mitigation plans because the preparation and Notification of the plans utilizes engineering and legal resources similar to those currently used in the space station licensing process. All parties, including small entities, will have resources available to prepare and disclose orbital debris mitigation plans. Many software tools useful in preparing orbital debris mitigation plans are available for free via the Internet such as via the orbital debris mitigation website of NASA's Johnson Space Center (www.orbitaldebris.isc.nasa.gov).

Given the high implementation costs associated with satellite systems and services, the manufacturer or operator of the space station may not be a small business, even if the applicant requesting FCC authorization is a small business. In such a case, the manufacturer or operator of the space station will have the technical and financial means to assist applicants that are small businesses in preparing debris mitigation Notifications. Most elements of the orbital debris mitigation plans are reviewed on a case-by-case basis for all parties, including small entities. Under circumstances in which the Commission adopts rules in lieu of a case-by-case review, parties are permitted under existing FCC rules to seek waivers of such requirements for specific good cause shown. Notification of debris mitigation plans is not an annual or otherwise periodic, reporting requirement. The Commission reduced information collection requirements for all licensees, including small businesses, by amending FCC rules to provide automatic authorization for certain satellite maneuvers, such as qualifying orbit-raising maneuvers or end-of-life disposal maneuvers that previously required licensees to apply for prior FCC authorization.

6. The information collection requirements accounted for in this collection are necessary to mitigate the potential harmful effects of orbital debris accumulation. Without such information collection requirements, the growth in the orbital debris population may limit the usefulness of

space for communications and other uses in the future by raising the costs and lowering the reliability of experimental and amateur systems. Furthermore, the effects of collisions involving orbital debris can be catastrophic and may cause significant damage to functional spacecraft or to persons or property on the surface of the Earth, if the debris re-enters the Earth's atmosphere in an uncontrolled manner.

Notification of orbital debris mitigation plans is not a frequent information collection. It occurs as part of an application for FCC experimental or amateur licenses. Notification of debris mitigation plans is an on occasion (not an annual or otherwise periodic) reporting requirement.

7. The collection of information is not being conducted in any manner known to be inconsistent with the guidelines 5 CFR 1320.

8. On September 26, 2017, the Commission published a 60-day notice in the Federal Register (82 FR 44784) to solicit comments from the public. The comment period ended on November 27, 2017. No comments were received from the public in regard to the notice.

9. The Commission will not provide any payment or gift to respondents.

10. We foresee no need for confidentiality of information contained in the applications filed with the Commission. However, respondents may opt to request for confidentiality of the information pursuant to 47 CFR Section 0.459 of the Commission's rules.

11. This collection of information does not contain questions of a sensitive nature.

12. Commission records indicate that there are approximately 5 experimental space station operators and 5 amateur space station operators licensed by this Commission. Based on actual filings the Commission has received over the last three years, there are approximately **10 space station applications/notifications filed per year** by the **10 respondents** to this information collection. This number is an average and the actual number of applications may be substantially greater or less in any given year. The annual burden for this information collection is as follows:

5 applications per year for experimental space station authorization under Part 5 x 3 hours per Notification = 15 hours per year

5 notifications per year of amateur space station operations under Part 97 x 3 hours per Notification = 15 hours per year

Total annual responses for this collection: 5 + 5 = 10 responses

Total annual paperwork burden for this collection: 15 + 15 = 30 hours

We estimate that the loaded hourly rate for respondents' in-house staff to complete the, information collection requirements contained in this collection is \$40 per hour. Accordingly, 30 hours per year x \$40 per hour = \$1,200. **Total Annual "In-house cost" = \$1,200**

13(a). **Total capital and start-up costs:**

None. We do not believe that the collection requirements impose significant additional capital and start up costs on respondents. The collection of information regarding each applicant's orbital debris mitigation plan will not require the purchasing of additional computers, software, or other equipment because the debris mitigation plans can be prepared using computers and software already used in satellite system design and in preparing existing applications for space station authorization. In addition, many software tools useful in preparing orbital debris mitigation plans are available for free via the Internet, such as via the orbital debris mitigation website of NASA's Johnson Space Center (www.orbitaldebris.isc.nasa.gov).

(b). **Total operation and maintenance and purchase of services component:**

Commission records indicate that there are approximately 10 experimental and 10 amateur operators licensed by the Commission. Almost all operators rely on outside legal and engineering assistance to prepare information collection requirements for the Commission. We estimate that the hourly rate for outside legal is \$300/hour and engineering assistance is \$250/hour for an average rate of \$275/hour based on the fact that outside legal and/or engineering assistance may be needed. These figures are based on a small survey of local firms in the D.C. area and are considered conservative estimates.

We estimate that the additional burden on outside assistance to prepare Notifications of orbital debris mitigation plans as part of their space station applications will be 7 hours.

Accordingly, the additional annual cost burden to respondents resulting from the collection of information is as follows:

5 applications per year for experimental space station authorization under Part 5 x 7 hours per Notification x \$275/hour = \$9,625

5 notifications per year of amateur space station operations under Part 97 x 7 hours per Notification x \$275/hour = \$9,625

Total Annual Cost Burden = \$9,625 + \$9,625 = \$19,250

14. Annualized costs for work activities performed by Commission staff are expected to be minimal. Costs include the time of Commission staff, including attorneys and engineers, to review information collected from respondents and to consider possible comments on these plans from other potentially interested parties. No additional overhead or support staff will be required that would not have been already incurred without this collection of information. Minimal additional printing and publication expenses will be required to provide public notice of the collected information, where appropriate.

The core Commission staff consists of 1 Attorney Advisor (GS-11 to GS-14) and 1 Engineer (GS 11 - GS 14) at an average rate of \$46 per hour. We anticipate that any additional information collected from respondents will be reviewed by at least one GS 11- GS 14 Attorney for 1.5 hours and one GS

11 - GS 14 Engineer for 2.0 hours. The time of review is an estimate of the average number of hours of review, and may be substantially greater or less depending on the particular collection.

We estimate our costs as follows: Submissions per year = 10. Number of average hours per submission = 3.5. Total number of hours = 35 hours per year. Average hourly rate = \$46.
Total annual cost to the Federal Government = 35 hours x \$46 per hour = \$1,610

15. There are no program changes or adjustments in this collection.

16. The results of this collection of information will not be published for statistical use.

17. We do not seek approval to not display the expiration date for OMB approval of the information collection.

18. There are no exceptions to the certification statement.

Part B. Collections of Information Employing Statistical Methods:

This information collection does not anticipate the use of statistical methods.