Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

Comprehensive Review of Licensing and Operating Rules for Satellite Services

IB Docket No. 12-267

COMMENTS of ORBCOMM Inc.

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Executive Summary

ORBCOMM is the owner and operator of the ORBCOMM non-voice non-geostationary mobile satellite service system, and is a leading global provider of narrowband two-way M2M data communications solutions for asset tracking, management, and remote control. ORBCOMM has extensive experience applying for, launching and operating a non-geostationary satellite constellation under the current Commission rules. Accordingly, ORBCOMM is very well-situated to comment on the proposed revisions to the Commission’s satellite rules, particularly with regard to those proposals relating to non-geostationary satellite systems.

ORBCOMM endorses many of the proposed changes that will simplify, streamline and/or harmonize the current satellite rules. ORBCOMM also suggests several refinements relating to the proposals. ORBCOMM supports Commission proposals to: simplify and harmonize annual reports; reduce unnecessary information in satellite applications; clarify that mobile earth stations licensed by the Commission under blanket license authority are subject to permissive changes; codify the policy of allowing multiple fixed satellite service earth station antennas to operate under a single license under certain circumstances; have a satellite license remain in force while any modification or extension request is pending; eliminate unnecessary language regarding enforcement if license terms are violated with regard to government-Metsat coordination; streamline orbital debris mitigation submissions; require certification of on-orbit testing and compliance with parameters specified in the license; and clarify the information requested to describe non-geostationary satellite constellations. Additionally, ORBCOMM supports the proposed rule revisions regarding mobile earth station operations on civil aircraft, and suggests more clear criteria for the avoidance of harmful interference to aeronautical radio
systems. ORBCOMM also recommends that the Commission eliminate the requirement of specifying the number of MESs subject to a blanket license.

ORBCOMM supports many of the Commission’s proposed changes with respect to milestone compliance demonstrations, and offers suggestions for greater specificity relating to requirements for critical design review and commence physical construction milestone showings. ORBCOMM also proposes that non-geostationary replacement/replenishment satellite systems be exempted from performance bond posting requirements or arbitrary generic milestone deadlines. Finally, ORBCOMM urges the Commission to revise the rules to permit changes to non-geostationary satellite constellations without requiring prior Commission approval, so long as the changes do not create any additional risk of harmful interference or additional orbital debris issues.
In the Matter of Comprehensive Review of Licensing and Operating Rules for Satellite Services

IB Docket No. 12-267

COMMENTS of ORBCOMM Inc.

ORBCOMM Inc. (“ORBCOMM”) files these comments in response to the Commission’s Notice of Proposed Rulemaking in the above-captioned proceeding that aims to update, streamline and harmonize its licensing and operating rules for satellite services.\(^1\) As detailed herein, ORBCOMM applauds the Commission’s efforts to update and enhance the Part 25 satellite rules (the “Satellite Rules”), and believes that many of the specific proposals will help accomplish that goal. In addition, ORBCOMM suggests a few further refinements and rule changes that will also make the Satellite Rules more efficient and more equitable.

I. Introduction

ORBCOMM’s experiences at the Commission and in the marketplace makes it particularly well suited to comment on the Commission’s proposals for reform of the Satellite Rules. ORBCOMM is the owner and operator of the ORBCOMM non-voice non-geostationary...
(“NVNG”) mobile satellite service (“MSS”) system (the “ORBCOMM System”). ORBCOMM is a leading global provider of narrowband two-way M2M data communications solutions for asset tracking, management, and remote control. ORBCOMM’s global network and unique management tools enable delivery of reliable packet data communication capability to and from virtually any place in the world on a near real-time basis—simply and affordably.

ORBCOMM has extensive experience applying for, launching and operating a satellite system under the current Commission rules. ORBCOMM pioneered commercial non-geostationary orbit (“NGSO”) satellite services when it filed its application and petition for rulemaking in February, 1990. ORBCOMM participated in the Commission’s initial Negotiated Rulemaking that led to the development of the NVNG license application processing and service rules. ORBCOMM has also been involved in the two NVNG processing rounds at the Commission, along with filing multiple applications, amendments and modifications for its satellite system and accompanying earth station licenses. ORBCOMM is currently implementing its Generation 2 NVNG satellite system. ORBCOMM is thus very well-situated to comment on the revisions to the Satellite Rules proposed in the Comprehensive Review NPRM, particularly with regard to those proposals relating to NGSO satellite systems.

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ORBCOMM endorses many of the rule changes proposed in the Comprehensive Review NPRM, because those new rules will simplify, streamline and/or harmonize the Satellite Rules, many of which were adopted at various times over the years for different satellite services. As discussed in more detail below, ORBCOMM urges adoption of the Comprehensive Review NPRM proposals to: simplify and harmonize annual reports (¶ 20-21); reduce unnecessary information in applications on satellites (¶ 60-61); clarify that MSS earth stations (“MESs”) licensed by the Commission under blanket license authority are subject to permissive changes (¶ 78); codify the policy of allowing multiple fixed satellite service (“FSS”) earth station antennas to operate under a single license under certain circumstances (¶ 85); have a satellite license remain in force while any modification application or extension request is pending (¶ 116); eliminate unnecessary language regarding enforcement if license terms are violated with regard to government-Metsat coordination (¶ 144); streamline orbital debris mitigation submissions (¶ 75); require certification of on-orbit testing and compliance with parameters specified in the license (¶ 47); and clarify the information requested to describe NGSO satellite constellations (¶ 57).

With regard to a few of the proposals in the Comprehensive Review NPRM, ORBCOMM believes that some further refinement is necessary. ORBCOMM proposes a change to the proposed rule regarding the operation of NVNG MESs on civil aircraft that will increase the utility of that rule, and provide more clear criteria for the avoidance of harmful interference to aeronautical radio systems (¶¶ 26-27). ORBCOMM also supports many of the Commission’s proposed changes with respect to milestone compliance demonstrations, but based on its experiences, believes that the rules should provide greater specificity concerning the showings necessary to demonstrate compliance with the critical design review and commence physical
construction milestones (¶ 30). ORBCOMM further believes that NGSO replacement/replenishment satellite systems should not be subject to performance bond posting requirements or arbitrary generic milestone deadlines.

Finally, ORBCOMM believes that there are a few additional rule changes the Commission should implement that would make the Satellite Rules fairer and more efficient. Similar to how it treats Geostationary satellite system operators, ORBCOMM urges the Commission to amend the Satellite Rules to permit NGSO satellite system licensees to make changes to their constellation without requiring prior Commission approval, so long as the changes do not create any additional risk of harmful interference or additional orbital debris issues. Finally, ORBCOMM recommends that the Commission eliminate the requirement of specifying the number of MESs subject to a blanket license.

II. ORBCOMM Support for Rule Changes in the Comprehensive Review NPRM

ORBCOMM greatly appreciates the effort the Commission has undertaken to comprehensively review and update the Satellite Rules. The current Satellite Rules have evolved over time as various satellite services were created, new spectrum was allocated, and technology has advanced. The result is somewhat of a hodge-podge of rules that differ for varying services, creating occasional confusion and inequity. ORBCOMM thus applauds the Commission’s efforts to rationalize, harmonize, simplify and update the Satellite Rules.

ORBCOMM generally supports the proposed rule changes that will affect its NVNG MSS services. The Comprehensive Review NPRM at paragraphs 20-21 proposes to simplify the annual reporting requirements and to impose the same simplified reporting requirements on all categories of satellite services. The annual reports on the status of satellite systems are an
example of where the rules vary somewhat by service, but it certainly makes sense to impose common requirements on each of the services. Thus, ORBCOMM supports the Commission’s proposal to replace the disparate reporting requirements with a single, uniform rule.4

At the same time, ORBCOMM also supports the Commission’s proposal to simplify the reports by eliminating the reportage of outages that would either be redundant of requirements in Section 4.9(c) of the Commission’s rules, or of insufficient materiality to require reporting under that provision. For years, ORBCOMM has expended substantial resources to prepare and file detailed outage reports as part of its Section 25.142(c) Annual Report. ORBCOMM does not believe that this level of outage detail is material or otherwise useful to the Commission. ORBCOMM has never received any questions or requests for additional information from the Commission relating to the reported outage data, and the Commission has never otherwise indicated that these exceedingly detailed reports were necessary. Thus, ORBCOMM also supports the proposal in new Section 25.170 to eliminate the satellite outage reporting requirement.

ORBCOMM also applauds the Commission’s proposals to remove unnecessary “underbrush” in the Satellite Rules. ORBCOMM supports the Commission’s proposals at paragraphs 60-61 to reduce the collection of unnecessary and/or redundant information in space segment license applications. The Commission proposes to eliminate the requirements for such

4 ORBCOMM does, believe, however, that the Commission should not adopt its proposal to include as part of common requirements for the annual report information on “the status of space station construction and anticipated launch date.” Among other things, such a requirement would be redundant to the milestone certification requirements. The Commission should thus omit that requirement from proposed new Section 25.170 of the Satellite Rules. See, also, infra, at pp 11-13.
applications to include information relating to spacecraft weight and dimensions, on-ground and
in-orbit mass, power budgets at beginning and end of life, reliability of the space station and the
basis for the reliability estimate, and the number of transponders to be offered on a non-common-
carrier basis. To the extent any of that information is relevant to the orbital debris mitigation
analyses, ORBCOMM agrees that it should be included in the demonstration of compliance with
the orbital debris requirements.

In a similar vein, ORBCOMM endorses the Commission’s proposal at paragraph 144 to
eliminate the language in Sections 25.259 and 25.260 regarding the imposition of sanctions for
violations of the time sharing rules. The Commission clearly has authority to punish violations
of any of its rules, so including such language in these particular provisions is redundant and
repetitive.

ORBCOMM also supports the Commission’s proposals to eliminate the arbitrarily
disparate treatment of MSS and FSS systems in the Satellite Rules. In Paragraph 78, the
Commission suggests that there is no reason to allow certain changes to Earth stations without
prior approval only for FSS Earth stations. ORBCOMM agrees. If the change in question does
not increase the potential for harmful interference from the authorized earth station(s), there
should be no requirement for prior Commission authorization, regardless of whether the Earth
station is used for MSS or FSS.

Likewise, ORBCOMM endorses the Commission’s proposal at paragraph 85 to codify
the policy of allowing multiple FSS earth station antennas to operate under a single license under
certain circumstances. ORBCOMM has taken advantage of this policy to locate more than one
antenna at each of the four ORBCOMM gateway earth station facilities authorized by the
Commission. Each of these facilities operates two antennas in relatively close proximity under a single FSS earth station license. Such deployments are beneficial because they provide for better diversity, traffic capacity, and redundancy without creating additional interference concerns. ORBCOMM thus urges the Commission to adopt its proposal to codify such treatment in a new provision in Section 25.130(g) of the Commission’s rules, which will simplify licensing of earth stations with multiple antennas located in close proximity.

The Comprehensive Review NPRM also proposes some common-sense changes to the rules that will treat satellite services similar to other services. At paragraph 116 the Commission proposes to clarify that a space station authorization will not automatically terminate at the end of the license term if an application for extension is pending. Such a change makes sense in light of the typical disconnect between the Commission’s space station license terms and the useful life of a satellite or constellation of NGSO satellites, and the ensuing need for extensions. ORBCOMM agrees that it makes no sense for a Commission space segment license to automatically terminate while an application to extend the license term is pending, since such action would necessitate shutting down service or requiring the licensee (and the Commission) to expend resources unnecessarily in applying for and obtaining Special Temporary Authority to permit continuing operations. Moreover, such an explicit policy for space station licenses would be consistent with the Commission’s general treatment of allowing a license to remain in effect during the pendency of an extension application.5

ORBCOMM also appreciates the Commission’s efforts to harmonize the different rules that apply to particular NGSO satellite services. Thus, ORBCOMM supports the proposals at

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5 See, 47 C.F.R. §1.62.
paragraph 47 to standardize the timing and procedures for notifying the Commission that a technically-identical replacement satellite has been placed into service. And because the satellite system operator will presumably conduct a thorough check-out of the new satellite, ORBCOMM does not object to incorporating into that filing a certification that the satellite conforms to the license terms.

The Comprehensive Review NPRM also seeks to coordinate the information requirements for NGSO systems included in the rules, with the information requirements specified in Schedule S that accompanies the application. Paragraph 57 proposes to add to Section 25.114(c)(6) a requirement that the applicant specify the initial phase angle of a NGSO satellite in its orbital plane at a reference time. ORBCOMM supports this proposed change.

Finally, the Comprehensive Review NPRM at paragraph 75 seeks comment on rule changes that would clarify and simplify the orbital debris mitigation showings that are included in space station applications. Orbital debris is a critical issue, and as an affected space station licensee, ORBCOMM wants to ensure that the Commission and other satellite system operators have sufficient information to determine that an applicant is addressing this issue in a responsible manner.

ORBCOMM agrees that the current orbital debris information requirements to be included in an application are somewhat vague, as evidenced by its experiences in having to respond to Commission requests to supplement the orbital debris mitigation filings.6 ORBCOMM would support either proposal by the Commission – either specifying the

information to be included in Schedule S, along with a certification, or providing a template for
what needs to be included in a narrative description. To the extent the Commission decides that
a template is the better way to proceed, and given the complexity and importance of the orbital
debris issues, ORBCOMM urges the Commission to use a collaborative process with industry
input – perhaps either a workshop or an advisory committee – in order to develop such a
template.

III. Additional Refinements for Some of the Proposed Rules

For a few of the rule changes proposed in the Comprehensive Review NPRM, ORBCOMM believes that the public interest would be better served if those proposed rules were
further refined before being adopted by the Commission. At paragraph 26 of the Comprehensive
Review NPRM, the Commission proposes, inter alia, to move the rule addressing use of NVNG
MSS MESs on civil aircraft that is presently codified in 47 C.F.R. § 25.135(b) to a new rule
consolidating MES requirements for multiple mobile satellite services – the proposed new
Section 25.285 of the Commission’s Rules. ORBCOMM agrees that it makes sense to
consolidate and harmonize the Satellite Rules wherever possible, including provisions relating to
MES operations on civil aircraft. However, in the language proposed in the Comprehensive
Review NPRM for the new Section 25.285, the FCC carries forward a longstanding source of
confusion and ambiguity with respect to the regulation of NVNG MSS MES operations on civil
aircraft that should be corrected.

The final sentence of the current Section 25.135(b) states: “This subsection shall not
apply to transceiver units whose receivers are incapable of radiating in the 108-137 MHz
frequency bands.” The proposed new rule 25.285 includes similar language:
Operation of any of the following devices aboard aircraft is prohibited, unless the device is installed in a manner approved by the Federal Aviation Administration or is used by the pilot or with the pilot’s consent …. Earth stations used for non-voice, non-geostationary Mobile-Satellite Service communication that can emit radiation in the 108-137 MHz band.

In both instances – exempting from the prohibition NVNG devices that are “incapable of radiating” in the adjacent aeronautical band, or prohibiting NVNG devices “that can emit radiation” in the aeronautical band – the rule creates a limit that is both too stringent and incapable of measurement.

The proposed rule -- and the rule as currently written – could preclude ORBCOMM from offering its valuable tracking service for goods that may be carried as cargo on a civil aircraft. As a practical matter, ORBCOMM has been unable to get a third party measurement lab to certify that any ORBCOMM MES is incapable of radiating in the 108-137 MHz band, because this “absolute” prohibition cannot be measured. There are limits on the sensitivity of monitoring equipment and limits on the conditions under which any measurements could be taken, which precludes a testing facility from being able to state with authority that no radiation into the aeronautical band can occur.

Moreover, the criteria should not be absolutely no radiation into the aeronautical band, but rather no harmful interference into the band. The concern is whether the out of band emissions from an ORBCOMM MES might possibly cause harmful interference to an aircraft’s avionics or other aircraft systems operation in the 108-137 MHz band. ORBCOMM believes that the FAA already has developed appropriate protection criteria that guard against harmful interference in the subject frequency bands from out of band emissions, given the FAA’s paramount concerns of aircraft safety. ORBCOMM thus believes that compliance with those
(measurable) requirements, rather than the existing problematic “zero radiation” standard, should be the basis for the rule provision. ORBCOMM below suggests some revisions to the proposed new rule 25.285 to incorporate this change, along with some other minor revision to the rule language to better reflect how the FAA operates and how MSS devices may be operated on civil aircraft:

(a) Operation of any of the following devices aboard civil aircraft is prohibited, unless the device is installed operated in a manner approved permitted by the Federal Aviation Administration or is used by the pilot or with the pilot’s consent:

(1) Earth stations capable of transmitting in the 1.5/1.6 GHz, 1.6/2.4 GHz, or 2 GHz Mobile-Satellite Service frequency bands;
(2) ATC terminals capable of transmitting in the 1.5/1.6 GHz, 1.6/2.4 GHz, or 2 GHz MSS bands;
(3) Earth stations used for non-voice, non-geostationary Mobile-Satellite Service communication that can emit radiation in do not comply with the FAA’s harmful interference protection criteria established for aeronautical radio system receivers operating in the 108-137 MHz band.

These relatively minor revisions will facilitate the availability of beneficial cargo tracking services, like those provided by ORBCOMM, to be provided on civil aircraft without creating any risk of harmful interference to any aircraft’s operations.

The Comprehensive Review NPRM also seeks comment on the appropriate information that should be included in milestone compliance demonstrations.7 ORBCOMM agrees that the current situation is untenable, with a vague requirement that a licensee submit “information . . .

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7 Comprehensive Review NPRM at ¶ 30.
sufficient to demonstrate” compliance.8 ORBCOMM has experienced significant delays and
dispensed significant time and resources in filing and supplementing milestone compliance
demonstrations as a result of the vague requirements. ORBCOMM suggests instead that the
Commission simply require the licensee to submit a certification, under penalty of perjury, that
each milestone has been met.

The clearly stated public policy objective of the Commission’s satellite system
implementation milestones is to deter speculation, to ensure that the licensee is progressing with
the development of a new satellite system in a timely manner, and to preclude “warehousing” of
the authorized frequencies and orbital resources.9 It makes little sense to have the Commission
and licensees expend significant time and effort reviewing detailed evidentiary showings.
Certifications should suffice. The penalties for false certification, including potentially criminal
prosecution and revocation of the license, are sufficiently severe that the Commission can rely on
the certifications.

In addition, because the public policy objective of the Commission’s satellite
implementation milestone policy is to preclude warehousing of scarce orbital/spectrum
resources, the Commission should revise the Satellite Rules to eliminate the imposition of
milestones for all space segment license modifications entailing replacement/replenishment
satellites (as well as replacement/replenishment constellations in the case of NGSO satellite
services). Because “warehousing” is not implicated where there is an already-operating
satellite/system, there is no legitimate public policy justification for continuing to impose system

8 47 C.F.R. §§ 25.164 (d) and (e).
9 See, e.g., Amendment of the Commission’s Space Station Licensing Rules and Policies, 18
FCC Red 10760 (2003), at ¶ 175.
implementation milestones in connection with satellite replacement/replenishment space segment license modifications.

Furthermore, imposing milestones for replacement/replenishment satellites creates an artificial timetable that often directly conflicts with prudent business practice by the satellite system operator. It is not possible to predict the actual useful operational lifetime of a satellite or satellite system with complete accuracy. A responsible licensee will apply for replacement/replenishment authority well in advance of the expected end of that lifetime, given the significant lead times need for designing, constructing and launching satellites. But, under the current Satellite Rules, if it turns out the licensee was overly conservative (or insufficiently optimistic) with regard to the satellite/system lifetime, it can still be compelled to prematurely construct and launch spacecraft simply to comply with artificial milestones that commence with the issuance of the license modification authorizing the satellite replacement/replenishment program. A satellite operator conducting a satellite replacement/replenishment program has more than sufficient economic incentive to ensure service continuity and enhancement through timely execution. Continuing the current practice of imposing artificial generic milestones in this situation serves no useful purpose whatsoever. The timing of a satellite replacement/replenishment program should be driven by actual circumstances, rather than contrived deadlines.

IV. The Commission Should Consider Additional Rule Changes

In addition to the specific rule changes proposed in the Comprehensive Review NPRM, the Commission should use this opportunity to make other modifications to the Satellite Rules
that are the logical outgrowth of its proposal to reform the Satellite Rules comprehensively.\textsuperscript{10} The \textit{Comprehensive Review NPRM} seeks comment on a Globalstar proposal to provide NGSO satellite system operators with the flexibility to reposition satellites without prior Commission approval if the number of authorized operating space stations is not exceeded and the licensee certifies that the change(s) will not increase interference.\textsuperscript{11} The Commission additionally asks whether such permissive authority should preclude permanent changes from a licensee’s authorized altitude or orbital plane.

ORBCOMM believes very strongly that NGSO satellite system operators should be given flexibility to make changes to their Commission-authorized satellite constellation without incurring the significant delays and expense of obtaining prior Commission approval along the lines proposed by Globalstar. Specifically, the Satellite Rules should be revised to permit such flexibility for NGSO system licensees, but only if such changes: (i) do not entail deployments that exceed the authorized number of operating space stations; (ii) will not increase the risk of harmful interference to other authorized systems; (iii) will not create any greater risk of orbital debris; and (iv) will allow the licensee to maintain any prescribed coverage requirements. Under these circumstances, the Commission should permit such NGSO system modifications upon 30-days advanced notice (accompanied by the appropriate certifications/demonstrations), similar to

\textsuperscript{10} See, e.g., \textit{Long IslandCare at Home, Ltd. v. Coke}, 551 U.S. 158, 174 (2007) (“The Courts of Appeals have generally interpreted this to mean that the final rule the agency adopts must be ‘a logical outgrowth’ of the rule proposed. The object, in short, is one of fair notice.”).

\textsuperscript{11} \textit{Comprehensive Review NPRM} at ¶ 81.
the Commission’s current treatment of fleet management for geostationary orbit ("GSO") satellite systems.\textsuperscript{12}

NGSO satellite systems differ from GSO satellite systems insofar as NGSO systems are far more operationally dynamic. For example, the coverage and capacity provided at any given location within the service area of an NGSO system is typically dependant on the performance of multiple spacecraft in the NGSO constellation. The coverage and capacity of an NGSO constellation can also change over time due \textit{inter alia} to satellite outages or degradations. An NGSO satellite system operator may be able to make adjustments to its constellation to compensate for any such changes, or to accommodate a need for additional coverage or capacity in specific regions. However, under the current rules as interpreted by the Commission, virtually all such changes to an NGSO satellite system require prior Commission approval of a space segment license modification application (along with an accompanying significant filing fee). This process necessitates extensive delay while the application gets reviewed initially, goes on public notice and then awaits Commission approval.\textsuperscript{13} Both the licensee and the Commission must expend significant resources filing and processing such applications, in many instances needlessly.

The Commission recognized these problems when it amended its rules to permit GSO satellite system operators with significant flexibility to conduct fleet management without

\textsuperscript{12} 47 C.F.R. § 25.118(e).

\textsuperscript{13} In ORBCOMM’s experience, such modification applications take a minimum of a year to obtain Commission approval, and sometimes several years.
requiring prior Commission approval under certain circumstances.14 There is no valid reason to
withhold similar flexibility from NGSO satellite system operators. ORBCOMM thus agrees
with the Globalstar proposal for providing NGSO satellite system operators with a similar
procedure, although with some additional conditions.

When evaluating whether a proposed change to an NGSO satellite system is significant
enough to warrant Commission (and public) scrutiny and require Commission approval prior to
making such a change, the critical concern is whether there will be an adverse impact on any
third parties. Thus, a change to an NGSO satellite system should be permissible unless it will
increase the number of authorized operational satellites, increase the risk of harmful interference
to other authorized systems, create any greater risk of orbital debris, or adversely affect
customers (i.e., reduce service below any Commission-prescribed requirements). The NGSO
satellite system change by prior notification proposed here should be permitted regardless of
whether the change deviates from the altitude, orbit inclination, or the number and distribution of
spacecraft per orbital plane originally authorized in the relevant Commission NGSO space
segment license. Providing a process similar to the current fleet management rules that have
been applied to GSO satellite systems – thirty days advanced notice to the Commission with

14 Amendment of the Commission's Space Station Licensing Rules and Policies, Second
Report and Order, 18 FCC Rcd 12507 (2003) at ¶ 7 (footnotes omitted):

Establishing a streamlined procedure for satellite fleet management modifications, of the
kind SIA describes, would expedite grant of modification applications that do not involve
increased interference potential. We have previously allowed satellite operators to
rearrange satellites in their fleet to reflect business and customer considerations where no
other public interest factors are adversely affected. Moreover, such a streamlined
procedure would facilitate satellite operators' efforts to meet the service needs of their
customers. Further, by devoting fewer administrative resources to satellite fleet
management modification requests, we can direct more attention to other pending
applications.
appropriate information and certifications – will afford a sufficient opportunity for the Commission or potentially affected parties to review such notifications. If the Commission were to find that changes to be undertaken indicated by an NGSO licensee notification did not fall within the “permissive change” category, appropriate action could be taken to require filing of a space segment license modification application.

ORBCOMM thus recommends that the Commission adopt a new provision in Section 25.118 of the Satellite Rules that would provide such permissive authority and specify the information and certifications required to be included in the licensee’s prior notification. That submission would include: (i) a description of the changes to be made to the NGSO system with relevant updated parameters for the information required in an initial license application; (ii) certification that there is no adverse change in the interference envelope of the authorized NGSO system, or alternatively, certification that coordination with any potentially affected Commission licensee resulting from a change in the authorized NGSO system interference envelope has been completed; (iii) certification that there is no greater risk of collisions with other satellites or any other adverse effects on orbital debris; and (iv) a commitment to provide any information and/or fees if the changes necessitate any filing with the ITU that is required due to the change in the NGSO system. Attachment A to these comments is a proposed new Section 25.118(f) (the existing Section 25.118(e) would be re-titled “Geostationary [s]pace station modifications”) that would provide NGSO satellite system operators the flexibility to make such modifications to their constellations without prior approval, so long as those changes do not create additional interference or orbital debris risks.

15 The International Bureau should also be delegated authority to make the necessary changes to the International Bureau Filing System and Form 312 to accommodate such filings.
In addition to allowing such permissive changes, ORBCOMM urges the Commission to modify the provisions in Section 25.165 of the Commission’s rules to create an exemption to the bond requirement for NGSO space segment license modifications entailing satellite or constellation replacement/replenishment. The rule currently provides such an exemption for “replacement satellite licenses,” but the definition in the rules seemingly limits the relief to geostationary satellites. There is no good reason to discriminate against NGSO satellite system operators. As discussed above with regard to milestones, because “warehousing” is not implicated where there is an already-operating satellite/system, there is also no legitimate public policy justification for imposing bond requirements in connection with NGSO license modifications for replacement/replenishment satellites or systems.

ORBCOMM urges the Commission to get rid of the artificial system implementation milestones for NGSO replacement/replenishment license modifications, which would also eliminate the need for posting of a bond. But even in the unlikely event that the Commission finds a legitimate public policy justification for retaining milestone requirements for NGSO replacement/replenishment license modifications, it should still exempt such authorizations from the performance bond requirement. The requirement of a bond imposes real and significant costs on an NGSO satellite system licensee, without any countervailing benefits. Those resources could be much better applied elsewhere, including conducting additional research or hiring

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16 See discussion at pp. 12-13, supra.

17 In ORBCOMM’s experience, securing an FCC performance bond for a satellite space segment license requires both the full face value amount of the bond to be held as cash collateral by the surety company and the payment of substantial annual fees.
additional personnel. The Commission should thus also use this proceeding as an opportunity to expand the bond requirement “replacement” exemption to include NGSO satellite systems.

Finally, the Comprehensive Review NPRM generally asks whether there are technical rules or technical practices developed by other countries that might serve as an appropriate model for the Commission.\textsuperscript{18} As a global satellite system, ORBCOMM has experience with many different countries’ satellite service regulations. The United States’ satellite regulations – while still capable of further improvement as reflected by the changes proposed in the Comprehensive Review NPRM and these comments – are generally as good as, if not better than, those of any other nation. The one area where the Commission could learn from other countries, however, would be in the area of blanket MES licensing.

The Commission’s rules for blanket MES licenses require that the applicant specify the number of terminals to be covered by the license. As a result, from time to time a licensee must apply to modify its blanket MES authorization to specify an increase in the number of terminals. Many other countries that have MES authorization schemes analogous to the Commission’s blanket license approach (\textit{e.g.}, all such European countries) do not limit blanket subscriber terminal authorizations to a specified number of units. Rather than limiting the number of units, the regimes used by these countries simply rely on the same type of common technical characteristics requirement used by the Commission. Adoption of such an open-ended blanket authorization model, as used in other countries, would eliminate the need for licensees and the Commission to expend resources unnecessarily on modification applications where the only change is the number of terminals covered by a blanket license.

\textsuperscript{18} Comprehensive Review NPRM at ¶155.
V. Conclusion

The Commission has done an admirable job in comprehensively reviewing its satellite application and operating rules. ORBCOMM urges the Commission to adopt many of the proposals emanating from that review, as detailed above. In addition, ORBCOMM suggests some additional refinements to a few of the proposals, and some additional rule changes not specifically proposed in the Comprehensive Review NPRM. Together, all of these actions would well serve the public interest.

Respectfully submitted,

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Attachment A

Proposed New Section 25.118(f) of the Commission’s Rules

(f) *Non-Geostationary space station modifications.* A non-geostationary space station licensee may modify the deployment or operation of authorized space stations without prior authorization, but upon 30 days prior notice to the Commission, provided that the operator meets the following requirements.

(1) Any such modification to be implemented by the non-geostationary space station licensee shall not increase the total number of previously authorized operating space stations;

(2) The notification must be filed electronically on Form 312 through the International Bureau Filing System (IBFS) in accordance with the applicable provisions of part 1, subpart Y of this chapter:

(3) The notification must specify all changes to information provided in accordance with Section 25.114(c) and Section 25.114(d) in the application for the underlying space station license;

(4) The notification must include certification by the licensee that:

   (i) the licensee will continue to comply with all the conditions of its original license and all applicable rules after the modification;

   (ii) the modification to be undertaken will not increase the risk of harmful interference to other authorized systems, or alternatively, that coordination with any potentially affected Commission licensee resulting from a change in the authorized NGSO system interference envelope has been completed;

   (iii) the modification to be undertaken by the licensee will not result in any increased risk of orbital debris;

   (iv) the modification to be undertaken by the licensee will not result in a reduction of coverage below any Commission prescribed minimum; and

   (v) the licensee will furnish the Commission with whatever additional materials or assistance that may be required to complete any necessary ITU frequency registration process relating to the modification to be undertaken, and reaffirms its unconditional acceptance of any consequent ITU cost-recovery responsibility.