Federal Communications Commission
Washington, D.C. 20554

DA 11-1499

September 1, 2011

Walter H. Sonnenfeldt
Orbcomm, Inc.
2115 Linwood Avenue, Suite 100
Fort Lee, NJ 07024

Stephen L. Goodman, Esq.
Butzel Long Tighe Patton, PLLC
1747 Pennsylvania Ave., NW, Suite 300
Washington, DC 20006

Re: Modification Application of Orbcomm License Corp.
IBFS File No. SAT-MOD-20110801-00141
Call Sign: S2103

Dear Mr. Sonnenfeldt and Mr. Goodman:

On August 1, 2011, Orbcomm License Corp. filed the referenced application to modify the license for Orbcomm's non-voice, non-geostationary, low-Earth orbit (Little LEO) satellites. Pursuant to Section 25.112 of the Commission's rules,[1] we are dismissing the application as incomplete. Furthermore, we ask that in any re-filed application, Orbcomm address a number of questions which, while not grounds for dismissal, will facilitate Commission processing of the application.

Section 25.114(d)(14)(ii) requires an applicant to indicate that the "space station operator has assessed and limited the probability of accidental explosions during and after completion of mission operations." Orbcomm's application indicated that Orbcomm "believes there is virtually no possibility" that its spacecraft will explode on-orbit,[2] but did not indicate whether that belief was based on a formal assessment. In any re-filed application, please indicate whether Orbcomm

[1] 47 C.F.R. § 25.112. Section 25.112 of the Commission's rules requires the Commission to return, as unacceptable for filing, any space station application that is not substantially complete, contains internal inconsistencies, or does not substantially comply with the Commission's rules.

[2] Application Narrative at page 21 (un-numbered).

has completed a failure mode verification analysis concerning accidental explosions, and provide a copy of that analysis.[3]

Section 25.114(d)(14)(iv) requires an applicant to disclose the "quantity of fuel--if any--that will be reserved for post-mission disposal maneuvers." The Commission has indicated that disclosure statements must indicate the "amount of fuel, in kilograms, that is intended to be reserved to accomplish post-mission disposal, as well as the methodology used to derive the quantity, including the methods used to determine and address fuel gauging uncertainty."[4] Orbcomm's application did not specify the quantity of fuel reserved, instead indicating that "sufficient" fuel would be reserved,[5] and did not address fuel gauging uncertainty.

Although not a basis for dismissal, we request that any re-filed application provide the following information:

1) Concerning collision avoidance between the Orbcomm spacecraft and the International Space Station, please provide an organizational point of contact within NASA with respect to the operator-to-operator coordination described at Exhibit B, Page B-4 of the application narrative.

2) Concerning collision avoidance between the second stage of the Space X launch vehicle and the International Space Station, please indicate whether Orbcomm or its launch provider are undertaking operator-to-operator coordination with NASA, and in particular with respect to operations of the second stage following separation of the Dragon capsule.

3) Please provide additional information and explanation of the statement, on the twenty-second page of the application narrative, that "there will be no formal and active collision avoidance monitoring systems in place for the OG2 satellites." In particular, please indicate whether Orbcomm considers its coordination with NASA and the Joint Space Operations Center described at Exhibit B, Page B-5, as an informal coordination, and provide any other information concerning the nature, extent, and duration of the coordination with NASA and JSPOC.

4) Please indicate whether, given the "enhanced satellite maneuvering capabilities"[6] of the Orbcomm OG2 satellites, Orbcomm intends, during orbit raising and at its operational orbit, to undertake collision avoidance maneuvers in the event a high risk of collision is identified and confirmed. Please indicate whether any fuel has been budgeted for such maneuvers.

5) Concerning atmospheric re-entry of the OG2 satellites, Orbcomm estimates a risk of casualty per satellite of 3.9 in 10,000. This exceeds the acceptable risk of 1 in 10,000 specified in the U.S. Government Orbital Debris Mitigation Standard Practices. The application also indicates that Orbcomm's analysis is based on "conservative assumptions" that "several of

[3] See Public Notice, Report No. SPB-112, "Disclosure of Orbital Debris Mitigation Plans, Including Amendment of Pending Applications" 20 FCC Rcd 16278, DA 05-2698, at 2-3 (Int'l Bur. Sat. Div. 2005).

[4] Public Notice, Report No. SPB-112, "Disclosure of Orbital debris Mitigation Plans, Including Amendment of Pending Applications" 20 FCC Rcd 16278, DA 05-2698 (Int'l Bur. Sat. Div. 2005).

[5] Application Narrative at page 21 (un-numbered).

[6] Application Narrative at page 15 (un-numbered).

the more dense components" of the spacecraft will reach the surface of the Earth, but that "it is very likely none of the disposed satellite mass will survive re-entry."[7] The application did not provide any factual information or analysis in support of this assertion. Please provide any such supporting factual information and analysis, and, if appropriate, revise Orbcomm's overall risk assessment accordingly. Orbcomm may also wish to discuss possible insurance arrangements in connection with atmospheric reentry of the OG2 satellites.[8]

6) Concerning the second stage of the SpaceX launch vehicle, please describe the post-mission disposal plan for this space object, including whether it will be disposed of through controlled atmospheric re-entry. In the event disposal will be through controlled re-entry, please provide the projected geographic region of the debris field of the surviving components and fragments, if any, and any measures taken to forewarn people who are likely to be in the geographic region during the time period of the re-entry. In the event disposal will be through uncontrolled re-entry, please provide a projection of orbital lifetime and, for re-entry:

a. An estimate of the number of components and fragments, and their estimated dimensions and mass, likely to survive to the Earth's surface.

b. An estimate of the probability of human casualty resulting from surviving components and fragments of the satellite.

c. A full description of the assumptions and parameters used in developing the estimates.

Accordingly, pursuant to Section 25.112(a) of the Commission's rules,[9] and Section 0.261 of the Commission's rules on delegations of authority,[10] we dismiss the modification application of Orbcomm License Corp., without prejudice to re-filing.[11]

Sincerely,

Robert G. Nelson
Chief, Satellite Division
International Bureau

[7] Application Narrative at pages 23-25 (un-numbered).

[8] Mitigation of Orbital Debris, *Second Report and Order*, 19 FCC Rcd 11567, 11613 ¶ 111 (2004) (*Orbital Debris Order*).

[9] 47 C.F.R § 25.112(a).

[10] 47 C.F.R § 0.261.

[11] If Orbcomm re-files its application, it need not pay a further application fee. *See* 47 C.F.R. § 1.1109(d).