TMI
COMMUNICATIONS™

December 3, 2004

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington D.C. 20554

Re: TMI Communications and Company Limited Partnership
File Nos. SAT-LOI-19970926-00161 et al
Second Supplemental Narrative Regarding Orbital Debris Mitigation

Dear Ms. Dortch:

TMI Communications and Company Limited Partnership (TMI) is submitting this second updated supplemental narrative regarding the orbital debris mitigation plans for its 2GHz Mobile Satellite Service (MSS) system in response to the FCC's adoption of revised rules regarding this subject. See *Mitigation of Orbital Debris, Second Report and Order,* FCC 04-130, released June 21, 2004. The new rules came into effect on October 12, 2004. See 69 *Fed. Reg.* 54581 (September 9, 2004).

TMI's original authorization to provide MSS in the United States required it to provide supplemental information to the FCC on certain aspects of its orbital debris mitigation plan six months prior to its second construction design review (CDR) milestone date, then July 17, 2003. See *TMI Communications and Company, Limited Partnership, Order*, 16 FCC Rcd 13808 (Int'l Bur. 2001). TMI met this condition by filing a letter, dated January 14, 2003, that contained a supplemental narrative regarding orbital debris mitigation. Pursuant to the Bureau' s 2001 Order, the letter covered three areas: (1) the minimization of debris generated by accidental explosions; (2) avoidance of collision with large, known objects; and (3) post-mission storage orbit parameters.

It is TMI's view that its orbital debris mitigation plan as supplemented by its January 14, 2003 letter substantially complies with the 2004 rules adopted by the FCC for new foreign licensed satellite applicants, specifically new rule Section 25.114 (d)(14). TMI also notes that the new rules do not expressly require foreign parties that currently hold a U.S. satellite authorization, such as TMI, to update their plans. However, for the avoidance of doubt, and in view of the revised November 2004 CDR milestone adopted when TMI's authorization was reinstated earlier this year (See *Memorandum Opinion and Order*, FCC 04-144, released June 29, 2004) TMI hereby supplements the second and third sections of its January 14, 2003 narrative to address Sections 25.114(d)(14)(iii) and (iv) of the FCC's new rules.

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It is TMI's view that the first portion of the January 14 narrative and its prior FCC satellite application, as amended, provide the information necessary to meet the first two subparagraphs of this new rule, namely Section 25.114(d)(14)(i) and (ii).

Avoidance of Collision With Large, Known Objects

TMI's Canadian authorization grants it the right to launch its satellite into an orbital location at 107.3 degrees W.L. TMI intends to contract with Telesat Canada or another experienced satellite operator for its stationkeeping services. Telesat owns and operates Anik F1 at the same orbital location, and will co-locate Anik F1R when it is launched in mid-2005. Mobile Satellite Ventures (Canada) Inc. ("MSV Canada") owns the MSAT-1 mobile satellite, which is controlled by Telesat under a TT&C contract. MSV Canada has applied to Industry Canada for a space station authorization for the next-generation MSV-2 mobile satellite, also to be located at the 107.3 degree W.L. position, and has indicated in its application that it intends to contract with Telesat for TT&C services. In its January 14 letter, TMI has described Telesat's practice with respect to the co-location of satellites. TMI is not aware of any other existing or planned satellites to be operated by other parties expected to be co-located at the 107.3 degree W.L. position.

Post-mission Storage Orbit Parameters

TMI's January 14, 2003, narrative states that at the end of its mission, TMI will raise its MSS satellite to an orbit 300 km above its planned operational orbit. This orbit will meet the minimum orbital requirements stated in Section 25.283 of the new Rules. Pursuant to Section 25.114(d)(14)(iv), Loral has calculated the disposal orbit for the satellite to be 291 km above the operational altitude using the Inter-Agency Space Debris Coordinating Committee (IADC) formula stated in Section 25.283 and at Paragraph 65 of the FCC's *Second Report and Order*, supra. The calculation is provided in Attachment 1 hereto. The recommended disposal orbit is below that proposed earlier by TMI, and therefore TMI will continue to use the earlier figure of 300 km.

TMI believes that the additional information supplied here is adequate for the FCC and its staff to determine that TMI's orbital mitigation plan remained in full compliance with the new Rules as of the revised CDR date. However, should any further information be required, please contact me directly or our attorney, Mr. Greg Staple, Vinson & Elkins LLP (Tel: 202 639 6744).

Yours truly,

Ted H. Ignacy
Vice-President, Finance
TMI Communications Inc., General Partner of TMI Communications
and Company, Limited Partnership

attachment

Attachment 1

Space Systems/Loral Calculation of Disposal Orbit

Using the IADC Formula

De-Orbit Altitude Calculation

- New FCC guideline specifies de-orbit altitude to be
  - 235 km + (1000 • Cr • A/m), where
    - Cr is the solar radiation coefficient (function of reflectively of spacecraft)
    - A is frontal area as seen from sun
    - m is satellite mass at end of life
- (Cr • A) is based on analysis from on-orbit data of several SS/L satellites.
  - (Cr • A) value has been ratioed appropriately from this on-orbit analysis to account for Terrestar's large unfurlable reflector, spacecraft body size and solar array size.
  - Value is estimated to be 176 m2
- Satellite dry mass is 3164 kg and is assumed as the end of life mass
- Resulting minimum de-orbit altitude required is
  - 291 km = 235 + 1000 • 176 / 3164