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BY HAND DELIVERY:

Mr. Thomas S. Tycz
Chief, Satellite Division
International Bureau
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: Applications of Lockheed Martin Corporation for Authority to Launch and Operate Geostationary Orbit Satellites in the Radionavigation-Satellite Service (File Nos. SAT-LOA-19990427-00045, *et seq.*, Call Sign S2370; SAT-LOA-19990427-00046, *et seq.*, Call Sign S2371; SAT-LOA-19990427-00047, *et seq.*, Call Sign S2372; SAT-LOA-19990427-00049, *et seq.*, Call Sign S2374; and SAT-LOA-19990427-00050, *et seq.*, Call Sign S2375)

Dear Mr. Tycz:

By this letter, Lockheed Martin Corporation ("Lockheed Martin"), an applicant for authority to establish a global radionavigation-satellite service ("RNSS") system called the Regional Positioning System ("RPS") from the 107.3° W.L., 133° W.L., 79° W.L., 71° E.L., and 131.8° E.L. orbital locations, responds the Satellite Division's January 26, 2005 letter to Lockheed Martin with regard to the above-referenced applications. In its January 26 Letter, the Satellite Division instructed Lockheed Martin to amend its above-referenced applications to include two-degree interference analyses with respect to the fixed-satellite service ("FSS") frequency requests that are included for feeder uplinks (in the case of the RPS applications for 107.3° W.L. and 133° W.L.) or both feeder uplinks and TT&C uses (in the case of the remaining three RPS applications). On this date, Lockheed Martin is amending each of the five RPS pending RPS applications, on FCC Form 312, to include the requested information.

In the January 26 Letter, the Satellite Division also reminded Lockheed Martin that after its applications and most recent substantive amendments were filed, the Commission reached a decision to amend Part 25 of its Rules to include provisions concerning the mitigation of orbital debris. *See* January 26 Letter, at 2 (citing *Mitigation of Orbital Debris, Second Report and Order,* IB Docket No. 02-54, 19 FCC Rcd 11567 (2004)). It indicated that in view of the fact that the rule changes are expected to become effective in the near future, Lockheed Martin may wish to consider providing this information in connection with its amendments. January 26 Letter, at 2.

As a satellite manufacturer as well as a proposed satellite operator, Lockheed Martin has a keen interest in the status of the Commission's rules and policies on the mitigation of orbital debris, and is a strong supporter of measures that strike the appropriate balance between ensuring the economical use of space by commercial satellites and the likelihood that the spacecraft Lockheed Martin builds and/or uses will be able to operate safely for the duration of their useful lifetimes. The five RPS spacecraft fall into two general categories, as the Commission is aware: (1) the RPS spacecraft at 133° W.L. and 107.3° W.L., which are hosted payloads on FSS satellites being launched this year by PanAmSat Corp. and Telesat Canada Corporation; and (2) the RPS spacecraft at 79° W.L., 71° E.L., and 131.8° E.L. that Lockheed Martin currently is proposing to build, launch, and operate on its own. The two categories have some very different considerations.

Lockheed Martin appreciates the Satellite Division's bringing the impending effectiveness of the rules and policies on orbital debris mitigation to its attention. It has considered providing the information in connection with its FCC Form 312 amendments containing the two-degree interference analyses for the FSS frequencies on RPS. With respect to both categories of RPS space stations described above, however, Lockheed Martin has determined that it is not currently in a position to provide the information to be required, and will, if necessary, await the issuance of a public notice calling for such information to be provided. *See* January 26 Letter, at 2.

With respect to the payloads that are being hosted by PanAmSat and Telesat, respectively, Lockheed Martin notes that the post-mission disposal obligations for the payloads to be licensed to Lockheed Martin fall to the hosts. The RPS satellite at 133° W.L. is being hosted by PanAmSat on the Galaxy 15 satellite that will be launched in a matter of months. The Commission authorized the satellite by grant stamp (with conditions) on August 11, 2004, subject to a condition relating to one element of the new rules on orbital debris mitigation. PanAmSat subsequently filed a letter with the Commission that satisfied the condition. *See* Letter dated October 1, 2004, from J. Godles, Counsel for PanAmSat, to Secretary, Federal Communications Commission, in File No. SAT-LOA-19991207-00119, *et seq.,* Call Sign S2387) (providing information on potential for in-orbit collisions). The RNSS payload that Lockheed Martin is adding to the Galaxy 15 satellite will have no impact whatsoever on the orbital debris potentials of the Galaxy 15 satellite – either pre-mission, during the mission, or post-mission. The design of the RPS payload is at the same level of engineering as the PanAmSat Galaxy 15 spacecraft, and thus poses no increased risk of debris, either through designed releases (of which there are none since the Lockheed Martin payload itself contains no deployable elements) or through random collision and inadvertent release, explosion of fuel or pressurized vessels (as the RPS payload contains no propulsion fuel, oxidizer, pressurant, tanks, piping or other pressurized vessels which are the basis for potential explosions). There also is no risk of orbital debris from the RPS payload due to collisions in orbit raising, station keeping maneuvers, and end of life disposal, all of which are the sole responsibility of the host spacecraft operator. In short, the Lockheed Martin RPS payload on Galaxy 15 is bounded by the existing Galaxy 15 debris mitigation plan that the Commission favorably considered when it licensed PanAmSat to launch and operate Galaxy 15 last summer.

The situation with Telesat and the Anik F1R satellite is similar. Although Telesat has not applied to the Commission for authority to operate Anik F1R in the United States as of yet, Telesat has told the Commission that its future generation of Telesat satellites (which includes the Anik F1R spacecraft that will host Lockheed Martin's RPS payload at 107.3° W.L.) will be designed to produce no in-orbit debris, and that the company's operational planning includes provision for de-orbiting its satellites at the end of their useful lives by raising the satellite orbit perigee and turning off all RP radiation sources. *See* Comments of Telesat Canada in IB Docket No. 02-54, *Mitigation of Orbital Debris,* at 2-3 (filed July 17, 2002). Telesat goes into further detail on the measures it uses to minimize debris generated by accidental explosions and its proactive stance on avoidance of in-orbit collisions. *Id.* 5-7. To the extent that Telesat may seek to serve the U.S. market in the FSS via Anik F1R, it will have to comply with the requirements of the Commission's orbital debris mitigation rules – something it can do by showing that the satellite's debris mitigation plans are subject to direct and effective regulatory oversight by Industry Canada (the Anik F1R system's national licensing authority). Lockheed Martin will consult with Telesat on the orbital debris mitigation situation, but notes for now that as is the case with the RPS payload on Galaxy 15, the design of the RPS payload is at the same level of engineering as the Telesat Anik F1R spacecraft, and thus poses no increased risk of debris, either through designed releases (of which there are none since the Lockheed Martin payload itself contains no deployable elements) or through random collision and inadvertent release, explosion of fuel or pressurized vessels (as the RPS payload contains no propulsion fuel, oxidizer, pressurant, tanks, piping or other pressurized vessels which are the basis for potential explosions). There also is no risk of orbital debris from the RPS payload due to collisions in orbit raising, station keeping maneuvers, and end of life disposal, all of which are the sole responsibility of Telesat as the host spacecraft operator.

As for the Lockheed Martin RPS spacecraft at 71° E.L., 131.8° E.L., and 79° W.L., Lockheed Martin is still in the process of developing its orbital debris mitigation plans. It will provide the details of those plans to the Commission no later than the date on which the Commission directs applicants with applications that were pending at the time the Second Report and Order in IB Docket No. 02-54 was adopted to file plans compliant with the new rule provisions.

Please direct any questions concerning the status of Lockheed Martin's orbital debris mitigation plans for the five space stations of the RPS system to the undersigned.

Respectfully yours,

Stephen D. Baruch
Attorney for Lockheed Martin Corporation

cc: Ms. Jabin Vahora, FCC
Ms. Jennifer Warren, Senior Director, Trade & Regulatory Affairs, Lockheed Martin