

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
)	
Streamlining Licensing Procedures)	IB Docket No. 18-86
for Small Satellites)	
)	

COMMENTS OF MOON EXPRESS, INC.

Moon Express, Inc. (Moon Express) submits the following comments in response to the Federal Communications Commission’s (Commission) Notice of Proposed Rulemaking, IB Docket No. 18-86, “Streamlining Licensing Procedures for Small Satellites” (NPRM).

In the “License Term” subsection of the NPRM (subsection III.A.1.c), the Commission requested input on the potential applicability of the proposed streamlined process for small satellites to commercial lunar missions (or other commercial missions beyond earth orbit):

31. *Applicability to Other Types of Missions.* We also recognize the possibility of commercial lunar missions or other non-Earth-orbiting missions in the future utilizing CubeSats or other small satellite designs. We seek comment on whether the small satellite process proposed here should be available to such missions and, if so, whether certain prerequisites for the small satellite process should apply only to Earth-orbiting satellites. For example, we seek comment on whether applicants for satellites not intended to orbit the Earth could calculate anticipated mission lifetime based on anticipated operational lifetime rather than total on-orbit lifetime, and whether a different license term should be applicable to such missions. We also anticipate that the proposed certification regarding disposal of the satellite through atmospheric re-entry would need to be modified for non-Earth-orbiting satellites, as well as the certification regarding deployment orbit. We seek comment.

Moon Express strongly supports the idea of allowing companies planning missions to the Moon and beyond to take advantage of the proposed new streamlined licensing process for small satellites. Such missions typically have short lifespans and fairly low-power communications

compared to traditional communications satellites and could benefit from a streamlined application process.

As noted in the NPRM, missions beyond earth orbit would probably need different standards for license terms and disposal. Most commercial missions to the Moon will likely last days or weeks, rather than years, although it is possible there would be some orbital missions could have lifetimes more consistent with a small satellite in low earth orbit (1-5 years). The Commission's suggestion to base license terms on the anticipated operation lifetime of such missions makes sense.

The Commission may want to consider relaxing its proposed maximum mass requirement of 180 kg for missions, since spacecraft designed for lunar missions (particularly those going to the surface) will often have more mass than a typical low earth orbit (LEO) small satellite. At the very least, clarifying that the Commission will only count the "dry" (without fuel) mass of a spacecraft going beyond earth orbit would be helpful since, unlike most LEO small satellites, many potential commercial lunar spacecraft (including Moon Express's) carry significant fuel to get the vehicle from earth orbit to the final destination and need to be heavier than a typical small satellite to survive a more rugged space environment. Raising the maximum mass requirement to 500 kg for spacecraft going beyond earth orbit, or for all small satellites (mentioned as an alternative in the "Maximum Spacecraft Size" section of the NPRM) would also be helpful. Or, the Commission could consider using some standard other than mass (such as length of mission or the power/type of communications device used) to determine whether missions beyond earth orbit can qualify for the streamlined rule.

If the Commission does extend the use of the proposed streamlined process to missions beyond earth orbit, it should consider using the term "spacecraft" (already defined in 47 CFR 25.103) or "small spacecraft" instead of or in addition to "small satellite" in its rules since many potential missions beyond earth will intend to land on, or travel between, celestial bodies such as the Moon and Mars rather than orbit them.

Moon Express appreciates the Commission's efforts to proactively address the needs of commercial missions beyond earth orbit and hopes that it will seriously consider our comments above. Thank you.