COMMENTS OF PLANET LABS INC.

Planet Labs Inc. (“Planet Labs”) hereby comments on the Notice of Proposed Rulemaking in the above-captioned proceeding (the “NPRM”).¹ Planet Labs applauds the Commission’s recognition of the continuing evolution of satellite technology and services, and it supports the FCC’s comprehensive effort to modernize and simplify the Part 25 rules. As part of this proceeding, Planet Labs urges the FCC to consider the impact of its rules on nanosatellite operators. Nanosatellites differ from conventional satellites in many material respects, including construction cost, build time, and launch process – all of which fundamentally impact how the FCC’s licensing rules affect nanosatellite operators.

Planet Labs is a privately funded commercial company that designs, builds and operates a fleet of earth imaging satellites that, because of their size, are commonly referred to as nanosatellites or nanosats.² Nanosats have historically been licensed under either experimental or amateur satellite authorizations.³ However, Planet Labs became the first nanosat operator to obtain a Part 25 commercial satellite license in 2013 and successfully launch and operate a

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¹ Comprehensive Review of Licensing and Operating Rules for Satellite Services, Notice of
² Nanosats are also referred to as “small satellites,” “small sats,” “cubesats” or “picosats,” depending on the context.
nanosat system in 2014.\textsuperscript{4} With the FCC’s assistance, Planet Labs has paved a path forward for other entrepreneurs, and the company expects several new nanosat operators to follow in the years ahead.

Despite the extraordinary interest in nanosats by both the satellite and investment communities, however, nowhere in the NPRM are nanosats directly addressed. Nanosats offer capabilities not achievable by large, monolithic satellites, namely a large number of globally distributed sensors that can enable new and impactful applications in remote sensing, communications and meteorological services. Some nanosat systems currently under development by other commercial entities include ocean monitoring, AIS vessel tracking, ADS-B aircraft tracking, and communications constellations. Nanosats, however, are not likely to replace the functionality of traditional satellites anytime in the near future, and the two types of systems can work in tandem to the overall benefit of the public.

Nanosats are distinct from conventional satellites in a number of ways that impact how the FCC’s licensing rules affect nanosatellite operators. The FCC should take into consideration these differences in revising or applying its licensing rules.

\begin{itemize}
    \item Secondary payloads – nanosat operators often have little capability to dictate the final orbit or launch schedule because nanosats are typically launched as secondary payloads.
    \item Fast development cycles – nanosats can be designed, constructed and ready for launch on the order of weeks or months.
    \item Short on-orbit lifetimes – nanosats are typically designed to operate on orbit for a handful of months or years and must be periodically replaced.
    \item Flexibility on numbers of satellites – for cost purposes, nanosats typically are deployed using extra capacity on launch vehicles, and thus, the final number of nanosats to be launched on a given rocket can remain unknown until very close to the actual launch date.
    \item In-house design, construction and operation – nanosat design, construction and operation is often conducted in house without the need to engage any third-party
\end{itemize}

\textsuperscript{4} See Stamp Grant, File No. SAT-LOA-20130626-00087 (granted December 3, 2013).
contractors or conduct any formalized review processes, such as a Critical Design Review (CDR).

- Capital requirements – conventional satellites typically cost several hundreds of millions of dollars to build, and FCC application fees and bond requirements, which are hundreds of thousands of dollars and millions of dollars, respectively, are a very small proportion of the budget by comparison. In contrast, nanosat design and construction costs are substantially lower (by several orders of magnitude), and thus, FCC application fees and bond requirements consume a much greater relative percentage of the budget and are disproportionately more burdensome to nanosat operators.

Planet Labs offers the following specific comments to the FCC proposals listed below:

I. **Milestones and Bonds**

   Planet Labs takes no position on whether milestone and bond requirements should be revised, but offers the following considerations. Planet Labs designs and builds its satellites at a very rapid pace, often on timescales well under 12 months and, in most cases, will already have completed the first 3 milestones by the time the relevant application has been approved. Additionally, Planet Labs, and many other nanosat operators, have much smaller budgets than traditional satellite ventures, which means that the bond requirements, application fees, and annual fees are disproportionately burdensome. Accordingly, lowering such requirements or fees for nanosat operators would facilitate the development of commercial nanosat systems.

II. **Section 25.113 “Station construction, launch authority, and operation of spare satellites”**

   Planet Labs supports the use of the term “deployment approval” instead of “launch authority.” In the case of Planet Labs satellites and many other nanosats, the satellites may be launched inside a “mothership satellite” or via the International Space Station, which can lead to a lag of up to several months in between the launch of the satellites and the deployment and

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6 NPRM at ¶¶ 19-34.
7 NPRM at ¶¶ 133-135.
commencement of operations. Thus, the term “deployment approval” more accurately encompasses the launch scenarios that are generally unique to nanosats.

Planet Labs also supports eliminating the notification requirement from Section 25.113(f).\textsuperscript{8}

\textbf{III. Section 25.165 “Posting of bonds”}

Planet Labs supports the proposed clarification that replacements for NGSO satellites are exempt from the bond requirements.\textsuperscript{9}

\textbf{IV. Conclusion}

Planet Labs supports the FCC’s continued efforts to modernize the Part 25 rules and asks that the FCC consider the impact of its licensing rules on nanosatellites, which are materially different than conventional satellites. Planet Labs also supports the FCC’s proposed changes to update Sections 25.113 and 25.165.

Respectfully submitted,

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\textsuperscript{8} NPRM at ¶ 134.
\textsuperscript{9} NPRM at ¶ 185.