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PAST PRESENT AND FUTURE NANOSATELLITE LAUNCH OPPORTUNITIES

Abstract

The Space Flight Laboratory at the University of Toronto Institute for Aerospace Studies (UTIAS/SFL) has an active launch program, called the Nanosatellite Launch Service (NLS). Although the principal rationale of the NLS program is to launch SFL spacecraft in a timely, cost effective manner, SFL also welcomes other organizations to join as launch partners. Each NLS cluster launch typically comprises one to six spacecraft, with each spacecraft having its own separation system. SFL uses its space-proven, proprietary XPOD separation system, which is customizable for spacecraft up to 15 kg in mass. The XPOD can also accommodate fixed appendages such as antennas and booms. For the NLS launches, SFL collaborates with a number of launch vehicle providers, and works jointly to optimize the launch configuration. This is intended to realize the best possible injection parameters during the critical initial acquisition and early operations. The close collaborations with the various launch vehicle providers also permit SFL to access different launches into various orbits, as well as to provide rapid launches for responsive space missions. To date, SFL's NLS program has launched sixteen spacecraft from nine countries on six cluster launches. Two additional launches with a total of five spacecraft have been manifested at the time of writing, while additional launches are under discussion. The paper will outline the history of the NLS program, its past launches, its current active launch agreements, as well as future planned launches.