



Improving Access to Space through Satellite Standards

For developers of midsized small satellites, the biggest hurdle is not building the satellite but launching these devices into space. The small satellite developer typically designs a customized satellite solution and then figure out a launch that meets their requirements. Once the launch is determined, the solution may be expensive, complicated, and inflexible. Since each solution is mission specific, the midsized smallsat cannot simply be swapped out onto another ride if something goes wrong or if another opportunity arises. The development of a standard launch unit, or LaunchU, for midsized smallsats—will enable the spacecraft to launch vehicle interface to be predefined, making the process quicker and more efficient.

The CubeSat Precedent

The CubeSat definition standardized the launch interface and revolutionized launching small spacecraft. CubeSats are a standard size (1U, 3U, 6U, etc.), which makes launching them rather simple. A launch vehicle can fit a certain number of CubeSats, and one CubeSat can be switched for another if there is a change in plans. LaunchU can create more opportunities for launch with shorter integration times byproviding the ability to swap satellites within predefined launch configurations.

The Working Group

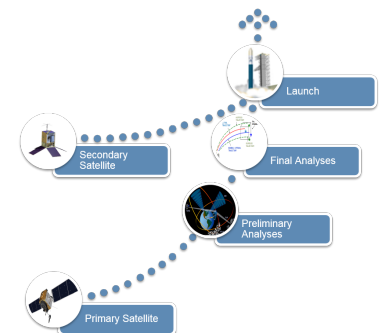
Developing an industry standard is never straightforward, as each stakeholder has needs and preferences based on their own proprietary technology. As the unbiased, federally funded research and development center for national security space, Aerospace has the unique perspective to guide this discussion. The working group included representatives from leaders in ridesharing technology, payload integration, and commercial space launch, including Virgin Orbit, VOX Space, United Launch Alliance, SpaceX, Tyvak, Cal Poly, Moog, and Spaceflight Industries. This led to the creation of the LaunchU standard. Read more about it at www.aerospace.org/launch-u

The Aerospace Corporation

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Advantages of the Launch-U Standard

- › More launch opportunities
- › More efficient use of launch vehicle space
- › Modular flexibility in spacecraft
- › Shorter integration times
- › Lower costs



Path to Launch with LaunchU | Standards that both the small satellite developer and the launch services contractor can incorporate in their design will allow each to develop independent of one another. The launch vehicle will not require satellite specific information until much later in the flow, making the integration easier and less unique.