

Small Sat Virginia Initiative - Overview

*Unanimously Endorsed by the Joint Commission on Technology and Science
Nanosatellite Technology Advisory Committee on 9/16/15.*

*Will Be Proposed for Inclusion in the Governor's 2017 – 2018 Budget and for consideration in the
2017 General Assembly Session.*



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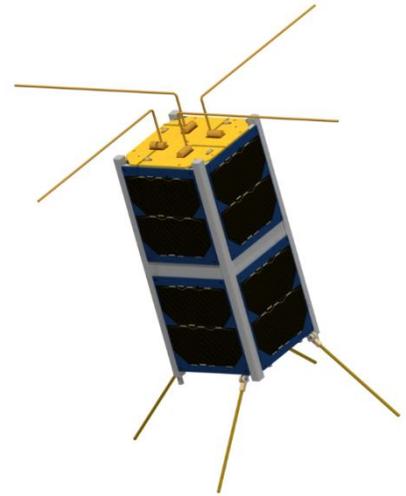
The Initiative: The *Small Sat Virginia Initiative* proposed and led by the Virginia Space Grant Consortium (VSGC) would create a Small Satellite Economic Cluster in the Commonwealth that can take advantage of the new business, jobs creation and research opportunities that the emerging and rapidly growing small satellite sector offers. It pulls together the Commonwealth's strong NASA, Mid-Atlantic Regional Spaceport, DOD, industry and university assets to ensure that Virginia is well poised to embrace this rapidly growing, technology disrupting sector. It builds small sat launch capabilities from the Mid-Atlantic Regional Spaceport and seeds university/NASA/DOD/industry collaborations for small sat research, resource monitoring and technology demonstration while fostering workforce development. ***With Commonwealth investment, the timing is right to make Virginia the "go to state" for Small Sat activities.***

The Opportunity: Small Satellites (under 500 kilos, most below 20 kilos) are receiving major commercial, DOD, NASA and security agencies investment because they offer quick and relatively inexpensive access to space for a wide variety of applications -- from Earth resource monitoring, scientific research and technology demonstration to communication and surveillance applications. Thousands of small satellites are expected to be launched over the next 15 years. The current global market of about \$41.6 billion is expected to grow at least 17% over the next five years. Universities can be major players in this technology sector with the benefits of building research capabilities and infrastructure and strong NASA, DOD and industry partnerships, as well as offering outstanding educational and workforce development impacts.

Partners: VSGC is leading 30 partners, including Virginia universities (UVA, ODU, Virginia Tech, William and Mary and Hampton University), NASA Langley Research Center, NASA Wallops Flight Facility, Mid-Atlantic Regional Spaceport and National Institute of Aerospace. Company participants include: Aerojet Rocketdyne, Cubic Aerospace, Deep Space Industries, Gas Plume Imaging, Global Atmospheric Technologies and Sciences (GATS), Hawkeye360, InTelSat General, Moog, NAL Research, Nanoracks, New Worlds Institute, Planetary Systems, Inc., OmniEarth, Orbital ATK, Planetary Systems, Inc, Schafer Corporation, Science and Technology Corporation, Science Systems and Applications, Inc., SpaceQuest, TriSept Corporation, and VPT. Other participants are: American Institute of Aeronautics and Astronautics and American Astronautical Society.

Projected Economic Impact A Virginia Tech economic impact study for Small Sat Virginia finds:

- The proposed state investment makes sound economic sense.
- Projects major return (between \$16.2 million and \$72 million) on a three-year, \$4 million annual investment
- Significant jobs creation -- conservatively 89 new high paying aerospace jobs in first three years.
- Strong potential for new business development and to contribute to growth in numerous related industry sectors (satellite TV, satellite radio, broadband, mobile satellite and aviation, as well as technology for communication, earth imaging, earth resource monitoring and reconnaissance).



New Virginia Economy Small Sat Virginia aligns beautifully with the Governor's New Virginia Economy program in the following ways:

- 1) Aerospace is one of the targeted industries for the New Virginia Economy.
- 2) There is a strong workforce development component.
- 3) The Virginia Tech economic impact study for Small Sat Virginia notes that there is excellent potential for a Small Sat Economic Cluster to propel new business startups in the Commonwealth.
- 4) The Virginia Tech economic impact study projects a very strong return on investment to the Commonwealth for economic development and jobs creation.

Commonwealth Seed Funding Request: The scaleable \$4 million annual request for seed funding from the Commonwealth would provide:

- Just over \$2.8 million to university-led small satellite projects in collaboration with NASA, DOD and industry; \$180,000 in other project support.
- An additional \$150K per year matched by industry would provide paid internships for students.
- Funding of \$500,000 in year one for development and \$300,000 in subsequent years to provide small sat launch capabilities at Virginia's spaceport. (2, 6U deployments per year)
- At least \$800,000 in contributed funding per year.