



Nanosatellites Advisory Committee
Monday, September 15, 2014 1:30 p.m.
House Room C, General Assembly Building

The JCOTS Nanosatellite Advisory Committee held its first meeting on Monday, September 15 at 1:30. JCOTS members Delegate Ken Plum, chair of the advisory committee, Delegate Tom Rust, Delegate Eileen Filler-Corn, and Delegate Terry Austin were in attendance, in addition to representatives from the public and private sector.

The Honorable Jack Kennedy, a former member of the House of Delegates, current Wise County Clerk of Court, and member of the Virginia Commercial Space Flight Authority, provided the Advisory Committee with background concerning the creation of the advisory committee. The committee was created via his request to Delegate Terry Kilgore to ask JCOTS to study issues related to the establishment of a Space Science Consortium, focusing on the development of nanosatellites. Mr. Kennedy noted that Virginia is home to one of four locations in the United States that could put nanosatellites into orbit. He shared his vision for collaboration in Virginia to put nanosatellites into orbit. A copy of his presentation is available on the JCOTS website.

Delegate Plum asked the university representatives at the meeting to share their current activities. Virginia Tech is currently working on a cube satellite mission that will launch next year on an atmospheric study. Ultimately, they are looking to launch a constellation of cube satellites -- several smaller satellites that could replace one large one. Virginia Tech's research is funded from a variety of sources, such as the National Science Foundation Funds, university investment, and NASA.

University of Virginia has been focused on its undergraduate space science program. They currently offer an undergraduate spacecraft design program, and have participated with NASA on projects involving high altitude balloons. They are interested in developing graduate research applications as well.

Old Dominion University is currently working on research that would control the rate that a cube satellite re-enters the atmosphere. This research has the opportunity to help the spaceport.

In the private sector, several smaller companies are developing techniques for using small satellites to measure the atmosphere, and are working on ways to download data to earth.

NanoRacks is developing a launch canister that would allow entities to buy a ride into space for their small satellites.

Dale Nash, director of the Virginia Commercial Spaceflight Authority, suggested that there might be opportunities for Virginia to work with Orbital Sciences to develop a competition for space to carry small satellites on rockets launching out of Wallops Island. The competition would potentially spark a lot of interest from the STEM education community, and would be a low-cost investment with potential long-term results. Members of the advisory committee were generally very supportive of this suggestion. Delegate Plum asked if Mr. Nash could put together some bullet points outlining his idea for the next meeting.

The committee had a brief discussion of the capabilities of 100 smaller satellites versus one large satellite. A larger satellite has more power from its solar arrays and can carry a more advanced computer, however, the one large satellite can only be in one place at one time. With smaller satellites, it is possible to test instrumentation or something new without risking a large, \$100 million satellite. Smaller satellites do not have the same communication range as a larger satellite, but it is possible to develop a swarm or constellation of small satellites that communicate with each other, thus creating a "senor web."

Delegate Plum asked what the committee thought the state's role should be in promoting nanosatellites. The committee generally discussed the state's role in outreach, public notice, and the ability to foster collaboration. As the only state in the region with a space port, the state can serve as a conduit for entities to utilize our assets at Wallops Island.

In preparation for the next meeting, Delegate Plum asked staff to look at other models of consortiums in the Code of Virginia, the Appropriations Act, and resolutions that could potentially be used here. Staff asked members of the committee for their assistance in identifying private sector entities that should be included on the committee. Finally, Delegate Filler-Corn asked for follow-up concerning what the advisory committee could do to help STEM education efforts in the Commonwealth.

Delegate Plum thanked the members for their participation, and the meeting was adjourned. The next meeting of the Nanosatellites Advisory Committee will be on Wednesday, October 22 at 1:30 in House Room C of the General Assembly Building.