

Hume Center – Software Defined Radio Test Bed

Experiment Purpose and Description

The Hume Center leads Virginia Tech's research, education, and outreach programs focused on the communication and computation challenges of the national security community. Education programs provide mentorship, internships, scholarships, and seek to address key challenges in qualified US citizens entering federal service. Advanced research programs focus on signals intelligence, electronic warfare, cybersecurity and analytics, and aerospace systems. In order to support this diverse range of research topics, The Hume Center is developing an in house software defined radio test bed similar to Virginia Tech's CORNET which has been developed by Wireless@VT (Reference File number 0095-EX-RR-2013).

This test bed is intended to provide Hume Center researchers and students with a platform for the testing and evaluation of cognitive radio engines, spectrum sensing techniques, dynamic spectrum access techniques, novel algorithms, protocols, and performance metrics in a live over the air environment. The use of the test bed will be made available to all students and employees of the Hume Center, as well as associated students and faculty as appropriate, in support of the range of research topics that are central to the Hume Center's Educational and National Security focus. Operation of the Hume Center SDR Test Bed is confined to the interior of the Hume Center Offices located in the ICTAS@CRC building at Virginia Tech's Corporate Research Center located adjacent the main campus in Blacksburg, Virginia. The test bed is generally comprised of Ettus Research Universal Software Radio Peripherals of multiple types to include their embedded series, networked series, bussed series, and X series as well as other experimental systems. Depending on the type of experimentation conducted by a particular researcher or group of researchers at times some nodes will be fixed while others will be mobile.