

UNMANNED AERIAL SYSTEMS (UAS) TEST SITE REPORT 2016



REPORT TO THE GOVERNOR AND THE LEGISLATURE OF THE STATE OF HAWAII

Pursuant to
Act 208, Session Laws of Hawaii 2015

OFFICE OF AEROSPACE DEVELOPMENT

Submitted by the State of Hawaii
Department of Business, Economic Development & Tourism

December 2016

BACKGROUND

In the spring of 2012, the FAA issued a national request for proposals to establish six regional test sites nationwide to help safely integrate Unmanned Aerial Systems (UAS) technologies into the National Airspace System (NAS). Our State Legislature subsequently passed SCR137 requesting our Office of Aerospace Development to assemble a team and draft a proposal to bid for this selection. Hawaii partnered with Alaska and Oregon in formulating the Pan-Pacific UAS Test Range Complex (PPUTRC), and submitted a proposal (building on the complementary terrain/climates afforded by each state) that was subsequently selected by the FAA in December 2013 as one of the six winning proposals (out of 50 submitted nationally from 37 states) to develop a national UAS test range.

In 2013, the Alaska State Government appropriated \$5 Million to support this effort; Oregon \$3.7 Million. In 2015, Hawaii through enactment of Act 208 (SB661, SD2, HD1, CD1), appropriated \$150,000 in support of our UAS Test Range development.

The purpose of the Hawaii UAS Test Range (as part of the PPUTRC) is to help test and certify new UAS technologies to help safely integrate them into the NAS. Ultimately, findings from the research conducted through this test range will facilitate safe integration and operation of UAS technologies in Hawaii's air space.

STATUS OF WORK:

Given the heavy emphasis on research and development it was determined that the leadership should be out of the University of Hawaii System. A private university or private business would not be a good match for leadership, given the Public Aircraft Operations and nature of the Certificates of Authorization (COA) that goes with the State site entitlement.

The Department of Business, Economic Development & Tourism has contracted with the University of Hawaii-Applied Research Laboratory (UH-ARL) to support development and management of Hawaii's UAS Test Range as part of the PPUTRC.

The UH-ARL are in the process of hiring a Project Manager to carry out the program.

EXPENDITURES:

None.

TRENDS:

Hawaii operates under Alaska's OTA with the FAA, so UAS operations in Hawaii must take place in coordination and agreement with Alaska as defined by their prime contract with the FAA. For example, originally our approach proposed re-marketing restricted Hawaiian airspace, including the Pacific Missile Range Facility and Wheeler Army Airfield, as well as other military and restricted airspace sites. In early 2014, the FAA disallowed this approach, which was common at many of the state test sites. All

other state test sites have since reverted to civil and private airspace only. Alaska advised us that disqualification would ensue if we pursued the restricted airspace approach. We must therefore adjust our plan to focus on civil and private airspace, following the rule of Federal supremacy over State lawmaking.

Expectations for what the range will do need revision as well, relative to what was originally stipulated in Act 208. The immediate need is to facilitate testing and evaluation of UAS to help safely integrate them into the National Airspace - pushing the state of the art well beyond current limits so as to develop insight and experience that will enable the FAA to create UAS rules, regulations, and certification methods in those outer bounds. Thus, operational areas of most interest are Beyond Line of Sight (BLOS); night operations; counter-drone and swarm/collaborative operations; detection and avoidance; design for safety and reliability; and effective training.

Hawaii's task is to interpret these needs in terms of Pacific extreme environment operations and conduct appropriate testing. High winds, salt air immersion, and over cliff and/or deep valley operations, will leverage Hawaii's unique environmental challenges and help focus operations on reliability degradation and safety issues that need to be addressed through system design and the creation of new standards.

Working collaboratively with Alaska and Oregon, while simultaneously monitoring approaches and partnering with the other state ranges, will best serve our efforts to address FAA's UAS testing objectives. Other state ranges have carefully positioned themselves in domains of value to their states, both operationally and financially. The Mid-Atlantic range (Virginia) is focusing on hurricane related disaster management via UAS; Texas and New Mexico are focused on border control via UAS; Nevada is investigating entertainment and journalism interests enhanced by UAS. All of these efforts challenge the state of the art to advance FAA needs and desires. They also highlight the unique needs of the host states and create new business opportunities for those states.