2008 Summary of Research Reports

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Project: Unmanned Air Vehicle Development Project
Sponsor: CIA

Statement of Work:

This project involves a wide range of tasks associated with the development and flight demonstration of small tactical Unmanned Air Vehicles (UAVs). The execution of these tasks will involve both senior faculty researchers and teams of Senior Midshipmen from the United States Naval Academy Aerospace Engineering Department. During their year long senior aerospace design course, small student teams will be asked to research open source information on advanced technology applications for UAVs of particular interest to the sponsor. This may involve applications of advanced jam-proof autonomous guidance and control technologies, advanced sensor and radio frequency homing technologies and other areas deemed pertinent by the sponsor. Each student team will then be tasked to design, fabricate and flight demonstrate a UAV that is capable of conducting a UAV mission exploiting these technologies. Upon successful completion of the project, a detailed description of the effort will be compiled and provided to the sponsor in the form of a Project Summary. In addition to supporting these student activities, faculty technical support will be provided both preceding and following the two semester design sequence, including during USNA summer intercessional periods in FY08 and FY09. This technical support will be tailored to meet specific sponsor needs in the areas of advanced technology exploration, evaluation, test and demonstration as well as providing technical expertise in the fields of aeronautics, test and evaluation, and advanced technologies for small UAVs. Reviews will be informal in nature, mutually agreed upon by sponsor and senior faculty, and on an as-needed basis. It is anticipated that these reviews provide the sponsor with updates on progress and provide USNA updates on specific direction. Funds will be MIPRed directly to the USNA by the sponsor to cover all faculty and student expenses associated with these activities - including the acquisition of all materials and components required to design, fabricate, validate and flight demonstrate the UAV systems and travel costs to the designated test site(s).

Project: Black Dart V UAV Demonstration Project
Sponsor: NAWCWD

Statement of Work:

This project will be run as a two semester design class project at the United States Naval Academy Aerospace Engineering Department. FY07 funds will be MIPRed directly to the USNA to cover all expenses and will be expended throughout both FY07 and FY08. Teams of Midshipmen will be tasked to construct and flight demonstrate Unmanned Air Vehicles (UAV↕ s) that are capable of conducting a militarily significant mission exploiting commercial-off-the-shelf (COTS) technologies. All funding necessary to purchase the materials and components required to construct, validate and flight demonstrate these UAVs will be provided by the sponsor, including all travel costs to/from the test site. This effort will culminate with a flight demonstration of the UAV systems at the Black Dart V Exercise to be conducted at the NAWCWD China Lake Test Facility in May of 2008.