

High Performance Multiband Airborne Remote Sensing System

Donald McKeown
Laboratory for Imaging Algorithms and Systems
Chester F. Carlson Center for Imaging Science
Rochester Institute of Technology

Wednesday, April 29, 2009
Pizza and soda provided at 5:30 pm
Meeting and Presentation at 6 pm

Carlson Learning Center (Room 1275)
Chester F. Carlson Center for Imaging Science (Building 76)
Rochester Institute of Technology

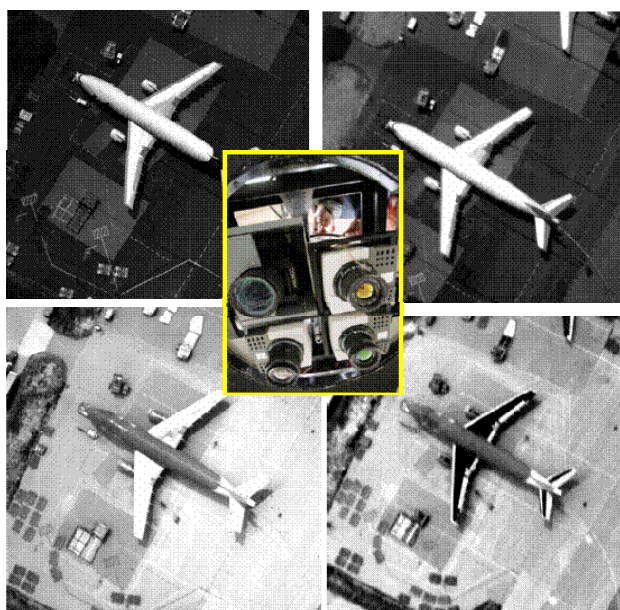
Abstract

The Chester F. Carlson Center for Imaging Science at the Rochester Institute of Technology operates a unique airborne remote sensing instrument that provides high resolution, georeferenced imagery in each of four spectral bands including three band (RGB) visible, short wave infrared, midwave infrared, and long wave infrared. The thermal infrared sensors also include an innovative in-flight calibration capability allowing thermal images to be rendered in terms of absolute aperture radiance or even target temperature (allowing for atmospheric and target emissivity effects).

A high performance GPS/INS system allows for direct geo-referencing of imagery without the use of ground control. An RIT developed processing workflow can also be applied to generate georeferenced imagery in realtime on board the aircraft for emergency response applications where timeliness of data delivery is vital. Experiments are underway this spring and summer to implement an improved RF data transmission system which will reliably transmit processed image data from the aircraft to the ground.

This sensor system was originally developed with funding from NASA grant NAG13-02051 under the name of Wildfire Airborne Sensor Program (WASP) to develop a new system for detection and mapping of wildfires. It is now available to use in a variety of applications.

This presentation will describe the WASP sensor system, its operations and applications.



Biography

Donald McKeown is a Distinguished Researcher in the Laboratory for Imaging Algorithms and Systems, a laboratory within the Chester F. Carlson Center for Imaging Science at RIT where he is responsible for project management and program development. He has been manager of the WASP program and related projects since its inception in 2002. Prior to joining RIT in 2001, he was manager of advanced sensor development at Eastman Kodak's Government System Division (now ITT's Space Systems Division). There he was in charge of developing next generation focal planes and processing electronics for high performance space based imaging systems. While at Kodak, he was also responsible for system engineering for the IKONOS satellite high resolution imaging payload.