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Cloud Remote Sensing

The Cloud Remote Sensing Group at AER operates within the Environmental Programs section of the Science Application and Programs Division. Group efforts are directed toward development and implementation of algorithms for analysis of environmental satellite data in operational and semi-operational ground processing environments. Research activities are primarily focused on inverse techniques for retrieval of spatial, radiative and microphysical properties of the Earth and its atmosphere from multispectral sensor data. Emphasis is on real data applications of the research algorithms in order to validate their broad applicability to existing and planned remote sensing systems capable of providing global and/or regional coverage. To support this work the group jointly operates and maintains a system of direct-broadcast [satellite receiving stations](#) with the Air Force Research Laboratory in Bedford, Massachusetts. Ground Systems also works closely with other groups at AER to exploit the extensive atmospheric modeling capabilities and expertise within the company for simulation of radiometrically-correct test scene data. Modeled scene data are used for controlled assessment of retrieval algorithm performance and for evaluation of their applicability with planned future satellite-based observing systems.

Current projects within the group include a major program to replace and upgrade the operational global cloud analysis and forecasting capabilities of the United States Air Force at the Air Force Weather Agency outside Omaha, Nebraska. This program, known as the Cloud Depiction and Forecast System - Version II (CDFS-II), will continue the 30-year record of continuous global operations with new science algorithms to process global-coverage data from