

## EVE: An Environment for On-board Processing

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### Abstract

The Information Technology and Systems Center (ITSC) at The University of Alabama in Huntsville (UAH) is investigating and developing an innovative processing system capable of handling the unique constraints and characteristics of the on-board satellite data and information environment. The EnVironmEnt for On-Board Processing (EVE) system will serve as a proof-of-concept of advanced information systems technology for remote sensing platforms. EVE's on-board, real-time processing will provide capabilities focused on the areas of autonomous data mining, classification and feature extraction. These will contribute to Earth Science research applications, including natural hazard detection and prediction, fusion of multi-sensor measurements, intelligent sensor control, and the generation of customized data products for direct distribution to users. EVE is being engineered to provide high performance data processing in a real-time operational environment. A ground-based testbed is being created to provide testing of EVE and associated Earth Science applications in a heterogeneous embedded hardware and software environment.